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COMMONWEALTH OF PENNSYLVANIA

DEPARTMENT OF FORESTS AND WATERS

Water Resources Service

STREAM FLOW RECORDS

For the Water Year

OCTOBER 1, 1923, TO SEPTEMBER 30, 1924

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STREAM FLOW RECORDS
OF
PENNSYLVANIA
FOR THE
WATER YEAR OCTOBER 1, 1923, TO SEPTEMBER 30, 1924

STREAM GAGING, FLOOD WARNING AND PRECIPITATION

This volume, containing records for the year ending September 30, 1924, is the third of a series of publications presenting stream flow records of Pennsylvania to be issued under separate cover. All previous records may be found in the Stream Flow Records of Pennsylvania for 1922, 1923, and the Annual Reports of the Water Supply Commission of Pennsylvania for the years 1910-1921.

STREAM GAGING

At the beginning of the year seventy-two stream gaging stations were being operated by the State. The station on the Youghiogheny River at Friendsville was reestablished on October 1, 1923, and the one on French Creek at Carlton on Novmber 1, 1923.

There has not been a sufficient number of current meter discharge measurements made at five stations for a satisfactory determination of daily discharge and at five other stations unsatisfactory conditions and changes in control section prevented a satisfactory rating. For these stations, daily mean gage heights and discharge measurements are published. The same data are also given for the other stations, together with tables of daily and monthly discharge.

The precipitation for the State was about 7.5 inches above normal for the year and the yearly mean flows for the primary streams in the State, excepting the North Branch Susquehanna River, exceeded the means for the water years 1910 to 1924 inclusive. As a whole the yearly mean discharge for the primary streams in the State was 9 per cent higher than the mean for the 15 years ending September 30, 1924.

The low flows for the year occurred during the month of October, 1923, although they were well above the minimum discharges previously recorded. The following table shows the lowest discharge reached and the minimum discharge previously recorded:

TABLE NO. 1.

Lowest discharge during the year ending September 30, 1924, and minimum discharge recorded.

Location	Stream	Lowest discharge during the year		Minimum discharge recorded	
Bethlehem	Lehigh River	375	October	160	October 1910
Riegelsville	Delaware River	1360	October	870	September 1908
Reading	Schuylkill River	1.0	October	115	August 1923
Wilkes-Barre	North Branch Susquehanna River	1.30	October	820	September 1913
Williamsport	West Branch Susquehanna River	591	October	382	September 1913
Newport	Juniata River	470	October and November	380	June and July 1899 November 1904
Harrisburg	Susquehanna River	3200	October	2330	September 1900
Kittanning	Allegheny River	722	October	570	September 1913
Avonmore	Kiskiminitas River	425	October	60	September 1908
Connellsville	Youghiogheny River	50	October	11	September 1908 October 1910

In November the precipitation as a whole was above normal, but it was not until about the first of December that the usual fall replenishment of ground water and stream flow took place. December was a warm month and the usual temperature affects on stream flow were practically negligible.

During January low temperatures prevailed over the first and last parts of the month; however, they were not of sufficient duration to cause ice conditions such as to affect stream flow for lengthy periods. A general rain over the Ohio Basin in the early part of the month raised streams to moderately high stages and the Ohio River at Pittsburgh exceeded flood stage by 5.4 feet, the highest since February 1915. Another rainfall in the middle of the month, accompanied by an increase of about 30 degrees in temperature, over the Allegheny and Shenango Drainage Basins, where the amount of accumulated snow was the greatest, produced a run-off that resulted in the highest stages for the year in the Allegheny and Shenango Rivers.

Climatic conditions for February were normal. Several cold days at the beginning of the month were followed by rising temperature and slight rainfall, which melted enough accumulated snow to increase the stream flow sufficiently to break the ice and carry it away without gorging. On the 19th and 20th there was a heavy rain and snow storm, although the only stream materially affected was the Monongahela River which exceeded flood stages in its lower reaches. Low temperatures again prevailed during the latter part of the month and the streams were ice bound for the third time during the winter. A marked increase in temperature and a slight rainfall, during the first few days in March, increased the streams flow sufficiently to break and carry away the ice, which did not again form during the year.

There was an unusual snowfall on March 11th and a heavy rain on the 29th and 30th which caused high stages, particularly in the southwestern rivers. The Youghiogheny River at Connellsville exceeded any previous recorded stage and the Ohio River at Pittsburgh reached 29.2 feet, the highest stage since March, 1913.

In April the precipitation was well above normal, with greatest excesses on the Delaware and Susquehanna Basins. On the first of the month there was a general snowfall that was exceptionally heavy in the central and southeastern counties. On the 6th a heavy rain melted the remaining snow on the drainage basins and nearly all streams in the State reached flood stages.

There were exceptional rains from the 8th to the 12th of May and some of the streams reached flood stages. The Juniata River was at its highest during the year and the Kiskiminitas, Monongahela and Ohio Rivers were at high stages. Rains in the latter part of June increased the stage of the Kiskiminitas River 19 feet at Avonmore, which was the third high flow in that stream in four months.

In July and August there were deficiencies in rainfall but the streams did not recede to unusually low stages due to the abnormal supply of ground water which accumulated during the three previous wet months. A severe rain storm on the last of September increased many of the stream heights to flood stages but with few exceptions the crest heights were not reached until after the end of the water year.

The highest stages during the year were well below those previously observed, excepting the Monongahela River, which reached to within 3.8 feet of the maximum recorded height for Lock No. 4, and the Youghiogheny River, which exceeded the maximum recorded stage, 18.4 feet, for Connellsville in March, 1907, by 2.1 feet.

The following table shows the highest stages reached during the year and the maximum stages recorded:

TABLE NO. II.

Highest stages reached during the year ending September 30, 1924, and maximum stages recorded.

Location	Stream	Highest stage during the year		Maximum stage recorded	
Bethlehem	Lehigh River	16.1	September	25.9	February 1902
Riegelsville	Delaware River	23.1	April	35.9	October 1903
Reading	Schuylkill River	16.2	September	23.0	September 1850
Wilkes-Barre	North Branch Susquehanna River	23.5	April	33.1	March 1865
Williamsport	West Branch Susquehanna River	19.0	April	33.5	June 1889
Newport	Juniata River	19.0	May	35.9	June 1889
Harrisburg	Susquehanna River	17.0	April	26.8	June 1889
Kittanning	Allegheny River	17.6	January	30.4	March 1913
Avonmore	Kiskiminitas River	24.0	March	33.8	March 1907
Lock No. 4	Monongahela River	41.4	March a	45.2	July 1888 a
Connellsville	Youghiogheny River	20.5	March	20.5	March 1924

a United States Weather Bureau record.

The yearly mean discharges in the three principal basins of the State have been compared with the mean discharges for the 15 year period ending September 30, 1924, and with the minimum and maximum yearly mean discharges for the period.

In the Delaware Basin, as represented by the Delaware River at Riegelsville, the yearly mean discharge was 7 per cent above the mean for the 15 years; 68 per cent more than that of 1915, the minimum year for the period, and 13 per cent below the 1920 mean, which was the maximum during the record. At Bethlehem on the Lehigh River, the mean was 7 per cent more than that for the 15 years; 59 per cent above the minimum which occurred in 1923, and 9 per cent below the maximum in 1922.

The yearly mean discharge in the Susquehanna Basin, as represented by the North Branch Susquehanna River at Danville, was 3 per cent less than the mean for the 15 years; 42 per cent more than the minimum in 1923, and 28 per cent less than the maximum in 1916. At Williamsport on the West Branch Susquehanna River, the mean discharge for the year was 18 per cent above the mean for the 15 years; 69 per cent more than that in 1923, which was the minimum for the record, and 9 per cent below the high mean for the period in 1912 and 1916. The mean discharge for the Juniata River at Newport was 42 per cent more than the mean for the 15 years; 117 per cent above the minimum in 1923, and 8 per cent above the previous maximum which occurred in 1916. At Harrisburg on the Susquehanna River the mean discharge was 12 per cent above the mean for 15 years; 74 per cent more than the minimum of 1923, and 16 per cent less than the maximum in 1916.

In the Ohio Basin, as represented by the Allegheny River at Kittanning, the mean discharge for the year was 1 per cent above the mean for 15 years; 39 per cent more than the minimum which occurred in 1923, and 22 per cent less than for 1912, which was the maximum during the period. At Connellsville on the Youghiogheny River, the yearly mean was 20 per cent more than that for the 15 years (not including 1919, when the record was not complete); 68 per cent above that of 1923, which was the minimum for the period, and 20 per cent below the maximum in 1912.

FLOOD WARNING

The year was marked by an unusual number of high river stages, although the streams in the southwestern part of the State were the only ones to approach or exceed their previous high water records.

A rainfall which averaged about 1.75 inches on the Allegheny and Monongahela Basins between the 1st and 3rd of January increased the stage of the Allegheny River 5.7 feet at Kittanning; the Kiskiminitas River 9.4 feet at Avonmore; the Monongahela River 15.8 feet at South Brownsville, and Youghiogheny River 8.4 feet at Connellsville, while the Ohio River at Pittsburgh rose to 27.4 feet which was 5.4 feet above flood stage and the highest it had been since February, 1915, when it was 28.4 feet.

On the 10th and 11th of January, when there was a decided rise in temperature, a rainfall of about 1.5 inches on the Allegheny and Shenango Basins, where the amount of accumulated snow was the greatest, increased the streams to their highest stages during the year. The Allegheny River at Kittanning rose from a stage of 6.8 feet on the afternoon of the 10th to 17.6 feet on the morning of the 12th and the Shenango River at Sharon increased from gage height 4.6 to 10.8 feet.

In February there was little snow on the drainage basins previous to the 10th when a moderately heavy fall covered the entire State. On the 19th and 20th a heavy snow and rain occurred but the Monongahela River was the only one materially affected by the storm and the only one to reach high stages during the month. It rose at South Brownsville from 11.6 feet on the 17th to 33.2 feet on the 21st and exceeded flood stage at Lock No. 4 by 1.8 feet.

On the 11th of March there was an unusual snowfall that covered the entire State and on the 29th and 30th a rainfall of rather uneven distribution melted most of the snow on the drainage basins. The rainfall averaged about one-half inch on the eastern part of the State, but the streams in the Delaware Basin were not materially affected. On the Susquehanna Basin the rainfall averaged about 1 inch and on the Ohio Basin 1.5 inches. The North Branch Susquehanna River rose 9.4 feet at Wilkes-Barre; the West Branch Susquehanna increased 8.8 feet at Williamsport; the Juniata rose 10.5 feet at Newport and the Susquehanna River increased 7.0 feet at Harrisburg. The highest stages reached were 14.6 feet at Wilkes-Barre; 11.9 feet at Williamsport; 15.5 feet at Newport and 11.7 feet at Harrisburg. In the Ohio Basin the Allegheny River rose 10 feet at Kittanning to gage height 15.2 feet on the 30th. The Conemaugh River reached a stage of 16 feet at Johnstown which was the highest since 1908, and the Kiskiminitas River rose 17.8 feet at Avonmore to a 24 foot stage which was the highest reached during the year in that stream. The Youghiogheny River rose 16.7 feet at Connellsville to gage height 20.5 feet which exceeded the previous high water record of March, 1907, by 2.1 feet. At South Brownsville the Monongahela River increased 16.2 feet to a stage of 41.7 feet which was the maximum on that stream during the year. The Ohio River rose about 14 feet at Pittsburgh to gage height 29.2 feet, which was 7.2 feet above flood stage and the highest since March, 1913, when it was 30.4 feet.

There was a general snowfall on the first of April, being exceptionally heavy in the central and southeastern counties. Heavy rains on the 6th of the month melted the snow and nearly all of the streams in the State were raised to flood stages. The rainfall over the Delaware and Susquehanna Basins averaged more than 1.75 inches, while in the Ohio Basin, where there was not as much snow, it averaged less than an inch.

The Delaware River rose 15 feet at Riegelsville to gage height 23.1 feet, which was the highest stage at that locality since March, 1914. The Lehigh River increased 4.7 feet at Bethlehem to stage 11.3 feet and the Schuylkill River rose 3.8 feet at Reading to gage height 9.4 feet. In the Susquehanna Basin the North Branch rose 15 feet at Wilkes-Barre; the West Branch increased 12.5 feet at Williamsport; the Juniata rose 8.5 feet at Newport and the Susquehanna increased 10 feet at Harrisburg.

The following table shows the predicted stages and those which actually occurred:

TABLE NO. III.

Predicted and Actual Stages, in feet, reached April 6-8, 1924.

Location	Stream	Predicted Stage	Actual Stage
Binghamton	North Branch Susquehanna River	16.0	15.3
Corning	Chemung River	16.0	14.7
Towanda	North Branch Susquehanna River	18.0	17.8
Wilkes-Barre	North Branch Susquehanna River	26.0	23.5
Danville	North Branch Susquehanna River	21.0	18.8
Bower	West Branch Susquehanna River	10.0	10.0
Clearfield	West Branch Susquehanna River	6.0	5.3
Renovo	West Branch Susquehanna River	12.0	13.0
Lock Haven	West Branch Susquehanna River	18.0	no record
Jersey Shore	West Branch Susquehanna River	22.0	no record
Williamsport	West Branch Susquehanna River	20.0	19.0
Lewisburg	West Branch Susquehanna River	18.0	no record
Sunbury	Susquehanna River	15.0	15.8
Huntingdon	Frankstown Branch Juniata River	10.0	10.0
Saxton	Raystown Branch Juniata River	10.0	8.3
Newport	Juniata River	17.0	16.0
Harrisburg	Susquehanna River	18.0	17.0

Exceptional rains from the 8th to the 12th of May over the Susquehanna and parts of the Delaware and Ohio Drainage Basins caused flood stages in certain streams. The Schuylkill and Delaware Rivers rose about 6 feet at Reading and Riegelsville and the rise in the Lehigh River at Bethlehem was less than 4 feet. The Juniata River was at its highest stage during the year and the highest it had been since March, 1920, when it was 19.1 feet. The North Branch Susquehanna River rose 10 feet at Wilkes-Barre; the West Branch 11 feet at Williamsport; the Juniata rose 14 feet at Newport and the Susquehanna River 8 feet at Harrisburg.

The following table gives the predicted stages and those which actually occurred:

TABLE NO. IV.

Predicted and Actual Stages, in feet, reached May 9-14, 1924.

Location	Stream	Predicted Stage	Actual Stage
Binghamton	North Branch Susquehanna River	8.0	6.9
Corning	Chemung River	12.0	11.5
Towanda	North Branch Susquehanna River	11.0	11.2
Wilkes-Barre	North Branch Susquehanna River	17.0	16.7
Danville	North Branch Susquehanna River	14.0	13.8
Bower	West Branch Susquehanna River	10.0	11.0
Clearfield	West Branch Susquehanna River	5.0	5.5
Renovo	West Branch Susquehanna River	11.0	10.9
Lock Haven	West Branch Susquehanna River	15.0	no record
Jersey Shore	West Branch Susquehanna River	18.0	no record
Williamsport	West Branch Susquehanna River	16.0	16.2
Lewisburg	West Branch Susquehanna River	14.0	no record
Sunbury	Susquehanna River	12.0	12.2
Huntingdon	Frankstown Branch Juniata River	12.0	11.5
Saxton	Raystown Branch Juniata River	14.0	13.7
Newport	Juniata River	20.0	19.0
Harrisburg	Susquehanna River	14.0	14.4

The precipitation over the upper reaches of the Allegheny Basin did not exceed 2 inches, while on the Kiskiminitas, Youghiogheny and Monongahela Drainage Areas it averaged about 3 inches, or the same as in the Susquehanna Basin. The Allegheny River at Kittanning reached gage height 13.8 feet; the Kiskiminitas at Avonmore, 21.8 feet; the Youghiogheny at Connellsville, 14.6 feet; the Monongahela at South Brownsville, 41.4 feet and the Ohio River at Pittsburgh, 26.4 feet. It was the fourth time in five months that the Monongahela River had exceeded flood stage at Lock No. 4 in amounts ranging from 1.8 to 10.4 feet and it was the third time in five months that the Ohio River at Pittsburgh had exceeded flood stage by heights ranging from 4.4 to 7.2 feet, while during the five preceeding calendar years it had been above flood stage only three times.

PRECIPITATION

Thirty-seven rainfall stations were maintained by the Department of Forests and Waters during the year, sixteen being new stations. The United States Weather Bureau maintains a larger number of stations and publishes its records monthly and annually. As it is more convenient for parties using precipitation records to find them all under one cover, a cooperative arrangement was made with the United States Weather Bureau in 1920 whereby the Department of Forests and Waters furnishes its records to the Weather Bureau for publication in its monthly and annual Climatological Data.

Prior to 1920 the Water Supply Commission of Pennsylvania published precipitation records in its annual reports; for subsequent years they have been published by the United States Weather Bureau.

The following table shows the precipitation stations in Pennsylvania, used in preparing the precipitation map shown on page 20. The table comprises the stations of the United States Weather Bureau, the Department of Forests and Waters and those of private interests.

TABLE NO. V.

PRECIPITATION STATIONS IN PENNSYLVANIA

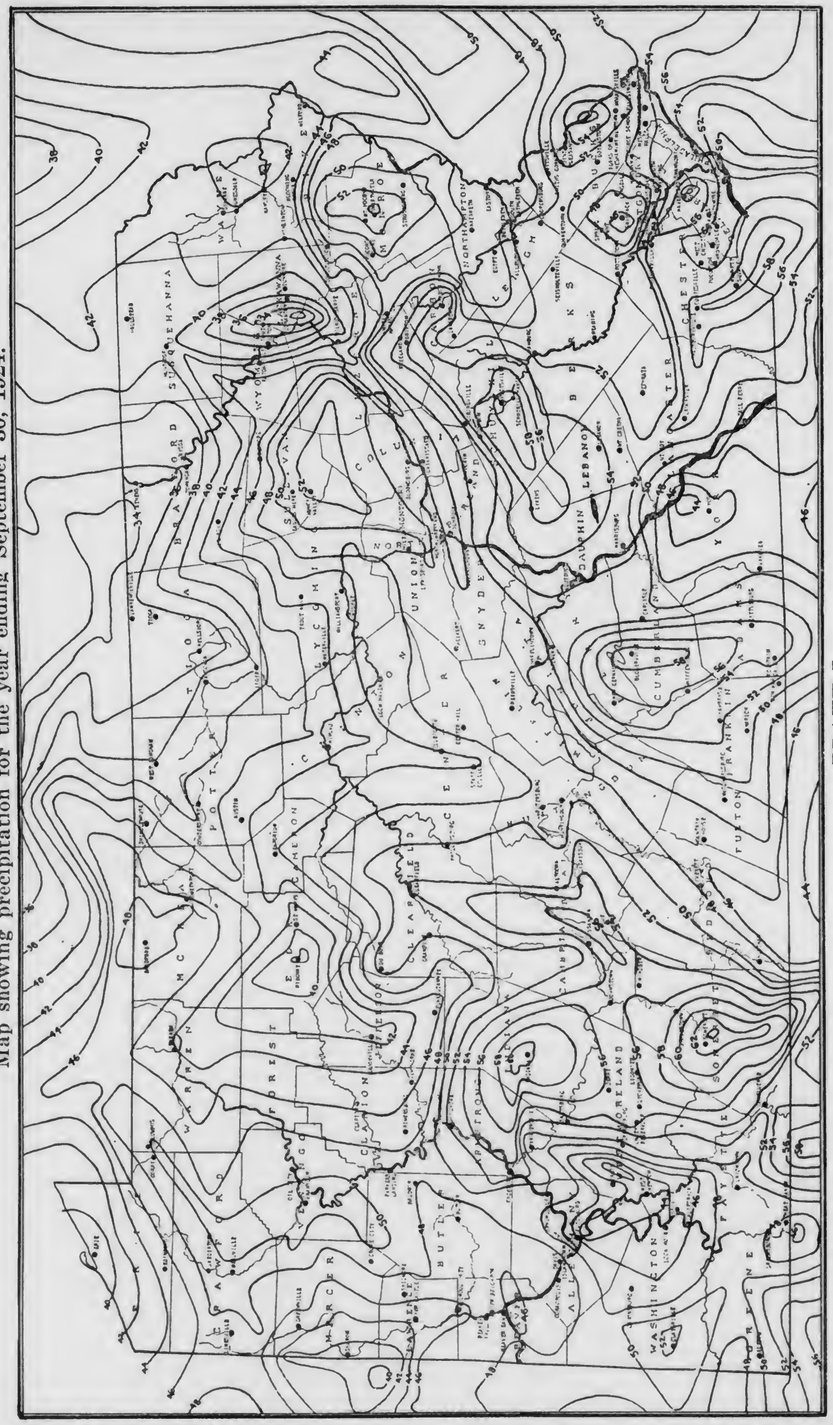
ATLANTIC DRAINAGE

STATION	COUNTY	DRAINAGE BASIN
Allentown	Lehigh	Lehigh
Altoona	Blair	Juniata
Ansonia	Tioga	West Branch Susquehanna
Bear Gap	Northumberland	Susquehanna
Bethlehem	Northampton	Lehigh
Biglerville	Adams	Susquehanna
Bloserville	Cumberland	Susquehanna
Bustleton	Philadelphia	Delaware
Campbell's Ledge	Lackawanna	North Branch Susquehanna
Carlisle	Cumberland	Susquehanna
Catawissa	Columbia	North Branch Susquehanna
Centre Hall	Centre	Susquehanna
Chambersburg	Franklin	Potomac
Clearfield	Clearfield	West Branch Susquehanna
Coatesville	Chester	Delaware
Colebrook	Lebanon	Susquehanna
Conshohocken	Montgomery	Schuylkill
Cresson	Cambria	Juniata
Doylestown	Bucks	Delaware
Emporium	Cameron	West Branch Susquehanna
Ephrata	Lancaster	Susquehanna
Everett	Bedford	Juniata
Forest City	Susquehanna	North Branch Susquehanna
Freeland	Luzerne	Lehigh
George School	Bucks	Delaware
Gettysburg	Adams	Potomac
Girardville	Schuylkill	Susquehanna
Gordon	Schuylkill	Susquehanna
Gouldsboro	Wayne	Lehigh
Graters Ford	Montgomery	Schuylkill
Hamburg	Berks	Schuylkill
Hanover	York	Susquehanna
Harrisburg	Dauphin	Susquehanna
Harrisburg, East	Dauphin	Susquehanna
Harrisburg, North	Dauphin	Susquehanna
Hawley	Wayne	Delaware
Holtwood	Lancaster	Susquehanna

STATION	COUNTY	DRAINAGE BASIN
Huntingdon	Huntingdon	Juniata
Huntsville Intake	Luzerne	North Branch Susquehanna
Jersey Shore	Lycoming	West Branch Susquehanna
Kennett Square	Chester	Delaware
Lancaster	Lancaster	Susquehanna
Lansford	Carbon	Lehigh
Lawrenceville	Tioga	North Branch Susquehanna
Lebanon	Lebanon	Susquehanna
Lewisburg	Union	West Branch Susquehanna
Lloyd	Tioga	West Branch Susquehanna
Lock Haven	Clinton	West Branch Susquehanna
Lykens	Dauphin	Susquehanna
Marcus Hook	Delaware	Delaware
Mauch Chunk	Carbon	Lehigh
Mifflintown	Juniata	Juniata
Montrose	Susquehanna	North Branch Susquehanna
Mount Carmel	Northumberland	North Branch Susquehanna
Mount Pocono	Monroe	Delaware
Mount Union	Huntingdon	Juniata
Muncy Valley	Sullivan	West Branch Susquehanna
Narberth	Montgomery	Delaware
Neshaminy	Bucks	Delaware
Palmerton	Carbon	Lehigh
Paupack	Pike	Delaware
Philadelphia (a)	Philadelphia	Delaware
Philadelphia (c)	Philadelphia	Delaware
Phoenixville	Chester	Schuylkill
Pike's Creek Corners	Luzerne	North Branch Susquehanna
Pike's Creek Intake	Luzerne	North Branch Susquehanna
Plymouth Reservoir	Luzerne	North Branch Susquehanna
Pottstown	Schuylkill	Schuylkill
Pottsville	Schuylkill	Schuylkill
Promised Land	Pike	Delaware
Quakertown	Bucks	Delaware
Reading	Berks	Schuylkill
Renovo	Clinton	West Branch Susquehanna
Salem	Wayne	Delaware
Scranton	Lackawanna	North Branch Susquehanna
Selinsgrove	Snyder	Susquehanna
Shamokin	Northumberland	Susquehanna
Shawmont	Philadelphia	Schuylkill
South Sterling	Pike	Delaware
Spring Brook Intake	Lackawanna	North Branch Susquehanna
State College	Centre	West Branch Susquehanna
Sunbury	Northumberland	Susquehanna
Towanda	Bradford	North Branch Susquehanna
Watres Reservoir	Lackawanna	North Branch Susquehanna
Weikert	Union	Susquehanna
Wellsboro	Tioga	West Branch Susquehanna
West Chester	Chester	Delaware
White Haven	Luzerne	Lehigh
Wilkes-Barre	Luzerne	North Branch Susquehanna

STATION	COUNTY	DRAINAGE BASIN
Wilkes-Barre, S. B. W. C.	Luzerne	North Branch Susquehanna
Williamsport	Lycoming	West Branch Susquehanna
York	York	Susquehanna
York Haven	York	Susquehanna
Port Jervis, N. Y.	Orange	Delaware
Trenton, N. J.	Mercer	Delaware
OHIO DRAINAGE		
Beaver Dam	Beaver	Ohio
Beaver Falls	Beaver	Beaver
Boydstown Reservoir	Butler	Allegheny
Bradford	McKean	Allegheny
Bradys Bend	Armstrong	Allegheny
Brookville	Jefferson	Allegheny
Claysville	Washington	Ohio
Cloe	Jefferson	Allegheny
Clymer	Indiana	Kiskiminitas
Confluence	Somerset	Youghiogheny
Coraopolis	Allegheny	Ohio
Corry	Erie	Allegheny
Creekside	Indiana	Allegheny
Dalton Run	Somerset	Kiskiminitas
Derry	Westmoreland	Kiskiminitas
Ebensburg	Cambria	Kiskiminitas
Elk Lick	Somerset	Youghiogheny
Falls Creek	Clearfield	Allegheny
Franklin	Venango	Allegheny
Freeport	Armstrong	Allegheny
Greensburg	Westmoreland	Youghiogheny
Greenville	Mercer	Beaver
Grove City	Mercer	Beaver
Herrs Island Dam	Allegheny	Allegheny
Hinkston Run	Cambria	Kiskiminitas
Indiana	Indiana	Kiskiminitas
Ingram	Allegheny	Ohio
Irwin	Westmoreland	Youghiogheny
Johnstown	Cambria	Kiskiminitas
Ketner	Elk	Allegheny
Laurel Run	Cambria	Kiskiminitas
Linesville	Crawford	Beaver
Lock No. 4	Washington	Monongahela
Lycippus	Westmoreland	Kiskiminitas
Martin	Fayette	Monongahela
Mill Creek	Cambria	Kiskiminitas
New Castle	Lawrence	Beaver
Newell	Fayette	Monongahela
North Fork	Somerset	Kiskiminitas
Parkers Landing	Armstrong	Allegheny
Pennline	Crawford	Beaver
Pittsburgh	Allegheny	Ohio
Quemahoning	Somerset	Kiskiminitas

STATION	COUNTY	DRAINAGE BASIN
Ridgway	Elk	Allegheny
Saegertown	Crawford	Allegheny
Saltlick	Cambria	Kiskiminitas
Saltsburg	Indiana	Kiskiminitas
Sharon	Mercer	Beaver
Somerset	Somerset	Youghiogheny
Springdale	Allegheny	Allegheny
Stoyestown	Somerset	Kiskiminitas
Uniontown	Fayette	Monongahela
Unity Reservoir	Westmoreland	Youghiogheny
Vandergrift	Westmoreland	Kiskiminitas
Warren	Warren	Allegheny
Washington	Washington	Ohio
Waynesburg	Greene	Monogahela
Westford	Crawford	Beaver
West Newton	Westmoreland	Youghiogheny
LAKE DRAINAGE		
Erie	Erie	Lake Erie
West Bingham	Potter	Genesee



DEPARTMENT OF FORESTS AND WATERS
WATER RESOURCES SERVICE
Map showing precipitation for the year ending September 30, 1924.

PLATE I

STREAM FLOW RECORDS

DEFINITION OF TERMS

The volume of water flowing in a stream—the "run-off" or "discharge"—is expressed in various terms, each of which has become associated with a certain class of work. These terms may be divided into two groups—(1) those that represent a rate of flow, as second-feet, gallons per minute, and discharge in second-feet per square mile, and (2) those that represent the actual quantity of water, as run-off in depth of inches, and millions of cubic-feet. The principal terms used in this series of reports are second-feet, second-feet per square mile, and run-off in inches. They may be defined as follows:

"Second-feet" is an abbreviation for "cubic feet per second." A second-foot is the rate of discharge of water flowing in a channel of rectangular cross section 1 foot wide and 1 foot deep at an average velocity of 1 foot per second. It is generally used as a fundamental unit from which others are computed by the use of the factors given in the tables of convenient equivalents, page 22.

"Second-feet per square mile" is the average number of cubic feet of water flowing per second from each square mile of area drained, on the assumption that the run-off is distributed uniformly both as regards time and area.

"Run-off (depth in inches)" is the depth to which an area would be covered if all the water flowing from it in a given period were conserved and uniformly distributed on the surface. It is used for comparing run-off with rainfall, which is usualy expressed in depth in inches.

The following terms not in common use are here defined:

"Stage-discharge relation", an abbreviation for the term "relation of gage height to discharge".

"Control", a term used to designate the section or sections of the stream below the gage which determine the stage-discharge relation at the gage. It should be noted that the control may not be the same at all stages.

The "point of zero flow" for a gaging station is that point on the gage—the gage height—to which the surface of the river falls when the discharge is reduced to zero.

CONVENIENT EQUIVALENTS

The following is a list of convenient equivalents for use in hydraulic computations:

Table for converting discharge in second-feet per square mile into run-off in depth in inches over the area.

Discharge (second-feet per square mile)	Run-off (depth in inches)				
	1 day	28 days	29 days	30 days	31 days
1	0.03719	1.041	1.079	1.116	1.153
2	.07438	2.083	2.157	2.231	2.306
3	.11157	3.124	3.236	3.347	3.459
4	.14876	4.165	4.314	4.463	4.612
5	.18595	5.207	5.393	5.578	5.764
6	.22314	6.248	6.471	6.694	6.917
7	.26033	7.289	7.550	7.810	8.070
8	.29752	8.331	8.628	8.926	9.223
9	.33471	9.372	9.707	10.041	10.376

Note—For part of a month multiply the run-off for one day by the number of days.

Table for converting discharge in second-feet into run-off in millions of cubic feet.

Discharge (second-feet)	Run-off (millions of cubic feet)				
	1 day	28 days	29 days	30 days	31 days
1	0.0864	2.419	2.506	2.592	2.678
2	.1728	4.838	5.012	5.184	5.356
3	.2592	7.257	7.518	7.776	8.034
4	.3456	9.676	10.02	10.37	10.71
5	.4320	12.10	12.53	12.96	13.39
6	.5184	14.51	15.04	15.55	16.07
7	.6048	16.93	17.54	18.14	18.75
8	.6912	19.35	20.05	20.74	21.42
9	.7776	21.77	22.55	23.33	24.10

Note—For part of a month multiply the run-off for one day by the number of days.

Table for converting discharge in second-feet into run-off in millions of gallons.

Discharge (second-feet)	Run-off (millions of gallons)				
	1 day	28 days	29 days	30 days	31 days
1	0.6463	18.10	18.74	19.39	20.04
2	1.293	36.20	37.48	38.78	40.08
3	1.939	54.30	56.22	58.17	60.12
4	2.585	72.40	74.96	77.56	80.16
5	3.232	90.50	93.70	96.95	100.2
6	3.878	108.6	112.4	116.3	120.2
7	4.524	126.7	131.2	135.7	140.3
8	5.170	144.8	149.9	155.1	160.3
9	5.817	162.9	168.7	174.5	180.4

Note—For part of a month multiply the run-off for one day by the number of days.

Table for converting velocity in feet per second into velocity in miles per hour (1 foot per second = 0.681818 mile per hour, or very nearly two-thirds mile per hour; 1 mile per hour = 1.46666 feet per second. In computing the table the values 0.68182 and 1.4667 were used)

Feet per second (units)	Miles per hour for tenths of foot per second									
	0	1	2	3	4	5	6	7	8	9
0	0.000	0.068	0.136	0.205	0.273	0.341	0.409	0.477	0.545	0.614
1	.682	.750	.818	.886	.955	1.02	1.09	1.16	1.23	1.30
2	1.36	1.43	1.50	1.57	1.64	1.70	1.77	1.84	1.91	1.98
3	2.05	2.11	2.18	2.25	2.32	2.39	2.45	2.52	2.59	2.66
4	2.73	2.80	2.86	2.93	3.00	3.07	3.14	3.20	3.27	3.34
5	3.41	3.48	3.55	3.61	3.68	3.75	3.82	3.89	3.95	4.02
6	4.09	4.16	4.23	4.30	4.36	4.43	4.50	4.57	4.64	4.70
7	4.77	4.84	4.91	4.98	5.05	5.11	5.18	5.25	5.32	5.39
8	5.45	5.52	5.59	5.66	5.73	5.80	5.86	5.93	6.00	6.07
9	6.14	6.20	6.27	6.34	6.41	6.48	6.55	6.61	6.68	6.75

1 second-foot equals 7.48 United States gallons per second; equals 448.8 gallons per minute; equals 646,317 gallons for one day.
1 second-foot for one year (365 days) covers 1 square mile 1.1312 feet or 13.5744 inches deep.
1 second-foot for one year (365 days) equals 31,536,000 cubic feet.
1 second-foot for one day equals 86,400 cubic feet.
1,000,000,000 (1 United States Billion) cubic feet equals 11,570 second-feet for one day.
1,000,000,000 cubic feet equals 413 second-feet for one 28-day month.
1,000,000,000 cubic feet equals 399 second-feet for one 29-day month.
1,000,000,000 cubic feet equals 380 second-feet for one 30-day month.
1,000,000,000 cubic feet equals 373 second-feet for one 31-day month.
100 United States gallons per minute equals 0.223 second-foot.
1,000,000 United States gallons per day equals 1.55 second-feet.
1 inch deep on 1 square mile equals 2,323,200 cubic feet.
1 inch deep on 1 square mile equals 0.0737 second-foot per year.
1 foot equals 0.3048 meter.
1 mile equals 1.60935 kilometers.
1 mile equals 5,280 feet.
1 square mile equals 2.59 square kilometers.
1 cubic foot equals 0.0283 cubic meter.
1 cubic foot of water weighs 62.5 pounds.
1 cubic meter per minute equals 0.5885 second-foot.
1 horsepower equals 550 foot-pounds per second.
1 horsepower equals 76.0 kilogram-meters per second.
1 horsepower equals 746 watts.
1 horsepower equals 1 second-foot falling 8.80 feet.
1½ horsepower equals about 1 kilowatt.

To calculate water power quickly: $\frac{\text{Sec. ft. x fall in feet}}{11}$ = net horsepower on water wheel realizing 80 per cent. of theoretical power

EXPLANATION OF DATA

The data presented in this report covers the period October 1, 1923, to September 30, 1924. At the first of January in most parts of the United States much of the precipitation in the preceding three months is stored as ground water, in the form of snow or ice or in ponds, lakes, and swamps, and this stored water passes off in the streams during the spring break-up. At the end of September, on the other hand, the only stored water available for run-off is possibly a small quantity in the ground; therefore the run-off for a year beginning October 1 is practically all derived from precipitation within that year.

The base data collected at gaging stations consist of records of stage, measurements of discharge, and general information used to supplement the gage heights and discharge measurements in determining the daily flow. The records of stage are obtained from

direct reading on a chain or staff gage. Measurements of discharge are made with a current meter by the general methods outlined in standard textbooks on the measurement of river discharge.

From the discharge measurements rating tables are prepared that give the discharge for any stage. The application of the daily mean gage heights to these rating tables gives the daily discharge from which the monthly and yearly mean discharge are computed.

The data presented for each gaging station comprises a description of the station, a table giving results of discharge measurements, a table showing daily mean gage height, a table showing the daily discharge, and a table of monthly and yearly discharge and run-off.

Where the base data are insufficient to determine the daily discharge, tables giving daily mean gage heights and results of discharge measurements are published.

The description of the station gives, in addition to statements regarding location and equipment, information in regard to any conditions that may affect the permanence of the stage-discharge relation; covering such subjects as the occurrence of ice, shifting of control, and the cause and effect of backwater. It gives also information as to diversions that decrease the flow at the gage, artificial regulation, maximum and minimum recorded stages, and the accuracy of the records.

The table of daily discharge gives the discharge in second-feet corresponding to the mean of the gage heights read each day. At stations on streams subject to sudden or rapid diurnal fluctuation the discharge obtained from the rating table and the daily mean gage heights may not be the true mean discharge for the day.

In the table of monthly discharge the column headed "Maximum" gives the mean flow for the day when the mean gage height was highest. As the gage height is the mean for the day it does not indicate correctly the stage when the water surface was at crest height, and the corresponding discharge was consequently larger than that given in the maximum column. Likewise, in the column headed "Minimum", the quantity given is the mean flow for the day when the mean gage height was lowest. The column headed "Mean" is the average flow in cubic feet per second during the month. On this average flow computations recorded in the remaining columns are based.

ACCURACY OF FIELD DATA AND COMPUTED RECORDS

The accuracy of stream-flow data depends primarily (1) on the permanence of the stage-discharge relation and (2) on the accuracy of observation of stage, measurements of flow, and interpretation of records.

A paragraph in the description of the station gives information regarding (1) permanence of the stage-discharge relation, (2) precision with which the discharge rating curve is defined, (3) refinement of gage readings, (4) frequency of gage readings, and (5) methods of applying daily mean gage height to the rating table to obtain the daily discharge.

For the rating tables "well defined" indicates, in general, that the rating is probably accurate within 5 per cent; "fairly well defined", within 10 per cent; "poorly defined", within 15 to 25 per cent. These notes are very general and are based on the plotting of the individual measurements with reference to the mean rating curve.

The monthly means for any station may represent with high accuracy the quantiy of water flowing past the gage, but the figures showing discharge per square mile and depth of run-off in inches may be subject to some error caused by the inclusion of non-contributing districts in the measured drainage area, or by inability to interpret the effect of artificial regulation of the flow of the river above the station.

The table of monthly discharge gives only a general idea of the flow at the station and should not be used for other than preliminary estimates; the tables of daily discharge allow more detailed studies of the variation in flow. It should be borne in mind, however, that the observations in each succeeding year may be expected to throw new light on data previously published.

The Commonwealth of Pennsylvania is divided into three main drainage basins; the Delaware, Susquehanna and Ohio. The hydrographic data in the following pages are divided into three groups, corresponding to these three basins. The stations in each basin are shown in the following tables and their location is indicated on the map (Plate II) with reference number corresponding to those given in the tables.

TABLE NO. VI.

Gaging Stations in Delaware Basin*

Station No.	Stream	Location
1	Lackawaxen River	West Hawley
2	Wallenpaupack Creek	Wilsonville
3	Shohola Creek	Shohola
4	Delaware River	Port Jervis, N. Y.
5	Bushkill Creek	Shoemakers
6	McMichaels Creek	Stroudsburg
7	Delaware River	Belvidere, N. J.
8	Lehigh River	Tannery
9	Little Lehigh Creek	Allentown
10	Lehigh River	Bethlehem
11	Delaware River	Riegelsville
12	Delaware River	Trenton, N. J.
13	Little Schuylkill River	Tamaqua
14	Schuylkill River	Reading
15	Perkiomen Creek	Graters Ford
16	Brandywine Creek	Chadds Ford

*For information available on each station, see description of station.

TABLE NO. VII.

Gaging Stations in Susquehanna Basin*

Station No.	Stream	Location
1	North Branch Susquehanna River	Binghamton, N. Y.
2	Chemung River	Corning, N. Y.
3	North Branch Susquehanna River	Towanda
4	Towanda Creek	Monroeton
5	Tunkhannock Creek	Dixon
6	Lackawanna River	Moosic
7	North Branch Susquehanna River	Wilkes-Barre
8	Wapwallopen Creek	Wapwallopen
9	Nescopeck Creek	St. Johns
10	Fishing Creek	Bloomsburg
11	North Branch Susquehanna River	Danville
12	West Branch Susquehanna River	Bower
13	Clearfield Creek	Dimeling
14	Driftwood Branch Sinnemahoning Creek	Sterling Run
15	West Branch Susquehanna River	Renovo
16	Bald Eagle Creek	Milesburg
17	Bald Eagle Creek	Beech Creek Station
18	Pine Creek	Cedar Run
19	Lycoming Creek	Trout Run
20	West Branch Susquehanna River	Williamsport
21	Susquehanna River	Sunbury
22	Frankstown Branch Juniata River	Williamsburg
23	Little Juniata River	Tyrone
24	Raystown Branch Juniata River	Saxton
25	Tuscarora Creek	Port Royal
26	Juniata River	Newport
27	Susquehanna River	Harrisburg
28	Little Swatara Creek	Pine Grove
29	Swatara Creek	Harpers

*For information available on each station, see description of station.

TABLE NO. VIII.

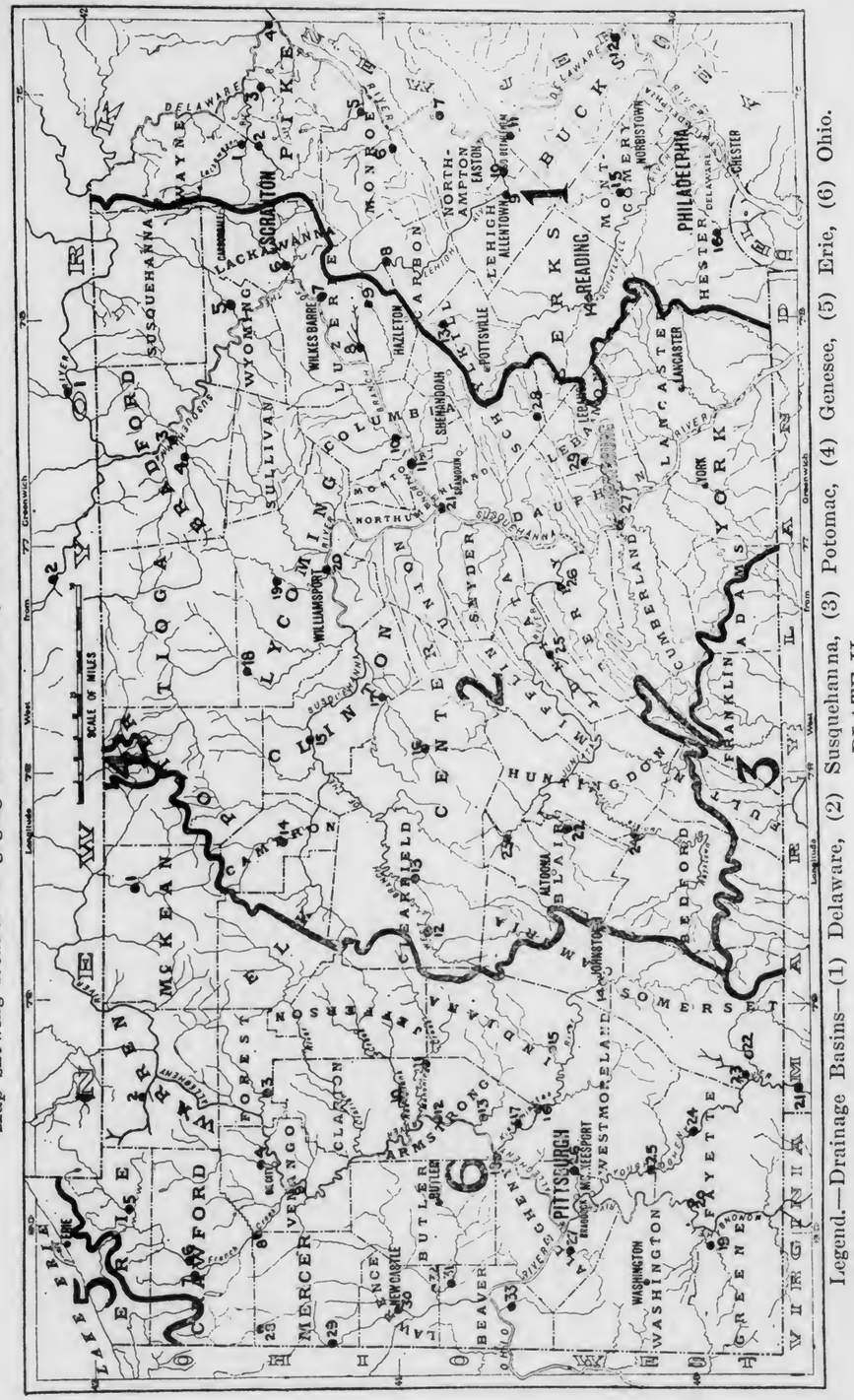
Gaging Stations in Ohio Basin*

Station No.	Stream	Location
1	Allegheny River	Larabee
2	Brokenstraw Creek	Youngsville
3	Tionesta Creek	Nebraska
4	Oil Creek	Rouseville
5	French Creek	Kimmeytown
6	French Creek	Saegertown
7	Cussewago Creek	Meadville
8	French Creek	Carlton
9	Allegheny River	Franklin
10	Red Bank Creek	Saint Charles
11	Mahoning Creek	Dayton
12	Allegheny River	Kittanning
13	Crooked Creek	Hileman's Farm
14	Stony Creek	Johnstown
15	Blacklick Creek	Blacklick
16	Kiskiminitas River	Avonmore
17	Kiskiminitas River	Vandergrift
18	Allegheny River	Freeport
19	South Fork Ten Mile Creek	Pollock's Mill
20	Monongahela River	South Brownsville
21	Youghiogheny River	Friendsville, Md.
22	Casselman River	Markleton
23	Laurel Hill Creek	Ursina
24	Youghiogheny River	Connellsville
25	Youghiogheny River	Suttersville
26	Turtle Creek	Trafford
27	Chartiers Creek	Carnegie
28	Shenango River	Jamestown
29	Shenango River	Sharon
30	Shenango River	New Castle
31	Connoquenessing Creek	Hazen
32	Slippery Rock Creek	Wurtemburg
33	Raccoon Creek	Moffatt's Mill

*For information available on each station, see description of station.

DEPARTMENT OF FORESTS AND WATERS
WATER RESOURCES SERVICE

Map showing location of gaging stations for the year ending September 30, 1924.



Legend.—Drainage Basins—(1) Delaware, (2) Susquehanna, (3) Potomac, (4) Genesee, (5) Erie, (6) Ohio.

PLATE II

GAGING STATION RECORDS

DELAWARE BASIN

DELAWARE BASIN—STATION NO. 1

LACKAWAXEN RIVER NEAR WEST HAWLEY

Location.—At single-span steel highway bridge, known as Riverside Bridge, West Hawley, Wayne County, about one-half mile upstream from the mouth of Middle Creek.

Drainage Area.—212 square miles.

Records Available.—May 19, 1921, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge: read to hundredths twice daily by J. S. Pennell.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Both sides of the channel are outlined by retaining walls downstream from the bridge. Banks are of medium height and subject to overflow at extremely high stages. Bed is composed of gravel. Control is at a riffle about 50 feet downstream from the gage, where the bed is composed of coarse gravel.

Extremes of stage.—Maximum gage height during the year, determined from levels and hydrograph, 10.48 feet at 10 p. m. September 30; minimum, 0.94 foot at 3.20 p. m. September 26.

Ice.—Stage-discharge relation usually affected by ice.

Daily Mean Gage Height, in feet, of Lackawaxen River near West Hawley, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.72	1.98	4.35	2.25	1.98	1.67	-------	2.45	1.82	1.45	1.18	1.19
2	1.66	1.86	3.52	1.95	1.86	1.64	2.61	2.35	1.73	1.39	1.08	1.18
3	1.56	1.81	2.97	2.27	1.78	1.57	2.48	2.22	1.66	1.37	1.08	1.05
4	-------	1.74	2.69	2.61	1.78	1.60	2.52	2.20	1.65	1.36	1.10	1.13
5	1.56	1.73	2.90	2.24	1.76	1.83	3.33	2.26	1.63	1.27	1.14	1.20
6	1.49	-------	3.87	1.96	1.77	2.35	4.32	2.10	1.62	1.22	1.10	1.33
7	1.44	1.81	3.80	2.14	1.79	2.36	7.44	2.05	1.62	1.32	1.05	1.30
8	1.41	2.27	3.18	2.11	1.77	2.21	-------	-------	1.50	1.94	1.06	1.16
9	1.41	2.56	2.80	2.08	1.89	2.02	3.92	2.26	1.60	3.64	-------	1.25
10	1.39	1.89	2.70	2.04	1.68	1.99	4.00	2.61	1.56	2.07	1.10	1.55
11	1.38	1.82	2.93	4.60	1.73	1.92	3.52	2.29	1.56	1.73	1.33	1.41
12	1.39	1.77	2.65	5.18	1.60	1.82	3.11	4.08	1.53	1.60	1.48	1.28
13	1.30	1.76	2.50	2.56	1.75	1.90	2.84	4.40	1.48	1.60	1.51	1.19
14	1.36	1.72	2.49	3.01	2.00	2.02	2.80	3.44	1.57	1.93	1.28	1.30
15	1.42	1.73	2.23	2.40	1.77	1.94	2.64	-------	1.48	1.69	1.09	1.16
16	1.33	1.68	2.12	2.98	1.76	2.02	-------	3.38	1.48	1.60	1.19	1.19
17	1.31	1.68	2.18	4.51	2.04	-------	2.32	2.96	1.43	1.50	1.18	1.10
18	1.36	1.64	2.00	3.01	1.72	1.80	2.82	2.72	1.38	1.40	1.26	1.07
19	1.32	1.71	1.79	2.75	1.82	1.80	4.92	2.77	1.40	1.34	1.15	1.08
20	1.37	1.69	1.90	2.68	-------	1.70	3.50	2.61	1.29	1.40	1.13	1.00
21	1.28	1.59	1.92	1.99	1.79	2.06	3.51	2.51	1.31	1.36	1.08	1.00
22	1.32	1.59	1.95	2.62	1.85	2.70	3.36	2.47	1.40	1.35	1.14	1.11
23	1.32	1.69	3.94	2.29	1.73	3.22	-------	2.23	1.32	1.30	1.07	1.38
24	3.26	2.32	3.45	2.21	1.78	3.50	3.02	2.13	1.30	1.27	1.06	1.24
25	3.12	-------	2.37	2.05	1.68	-------	2.75	-------	1.22	1.23	1.21	1.15
26	2.52	1.94	2.26	2.14	1.56	3.27	2.54	2.02	1.27	1.24	1.74	1.00
27	2.18	1.95	2.16	2.10	1.80	2.57	2.34	1.98	1.31	1.30	1.46	1.06
28	2.00	1.90	2.17	2.39	1.62	2.69	2.25	1.97	1.37	1.25	1.78	1.08
29	1.96	1.80	2.16	1.95	1.61	3.28	2.19	1.96	1.58	1.22	1.28	1.26
30	1.96	1.95	1.96	1.94	-------	3.50	-------	1.97	1.57	1.15	1.29	7.28
31	2.00	-------	2.17	1.99	-------	3.62	-------	1.83	-------	1.14	1.24	-------

NOTE.—Gage height not observed on days of no record.

DELAWARE BASIN—STATION NO. 2

WALLENPAUPACK CREEK AT WILSONVILLE

Location.—At two-span steel highway bridge, about one and a half miles south of Hawley, at Wilsonville, Wayne County.

Drainage Area.—227 square miles.

Records Available.—July 3, 1908, to August 31, 1924.

Gages.—Vertical staff attached to downstream end of pier and a Barrett and Lawrence water-stage recorder installed on top downstream end of pier. Zero elevation of gages, 1,146.78 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Right bank overflows at extremely high stages; left is high and not subject to overflow. Bed is composed of rock. Control is a log weir, about 70 feet downstream from the gage.

Extremes of Discharge.—Maximum stage during the year, from water-stage recorder, 4.65 feet at 9.30 p. m. April 7 (discharge, about 4,550 second-feet); minimum, from water-stage recorder, 0.58 foot at 5 p. m. August 29 (discharge, 32 second-feet).

Ice.—Stage-discharge relation seldom affected by ice.

Regulation.—Flow during law stages regulated, for the operation of silk mills, by use of flashboards on a three foot concrete dam about 35 feet upstream from the gage.

Cooperation.—Records furnished by Electric Bond and Share Company, New York City, Pennsylvania Power and Light Company, Allentown, and Phoenix Utility Company, Wilsonville.

Daily Mean Gage Height, in feet, of Wallenpaupack Creek at Wilsonville, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.98	1.23	1.72	1.43	1.20	0.80	2.55	1.42	1.40	0.75	0.70	-------
2	.92	1.15	1.89	1.49	1.20	.84	2.06	1.48	1.25	.75	.70	-------
3	.90	1.10	1.88	1.43	1.22	.88	2.15	1.40	1.20	.73	.70	-------
4	.88	1.08	1.72	1.79	1.18	.88	2.07	1.27	1.17	.73	.70	-------
5	.84	1.06	1.55	1.52	1.12	.88	2.03	1.30	1.12	.73	.70	-------
6	.84	1.05	1.56	1.52	1.12	1.00	2.20	1.23	1.08	.73	.70	-------
7	.83	1.06	1.80	1.52	1.13	1.26	3.78	1.16	1.12	.80	.70	-------
8	.79	1.25	1.92	1.50	1.06	1.28	4.25	1.07	1.06	.80	.70	-------
9	.78	1.30	1.79	1.53	.98	1.23	3.36	1.17	1.02	1.73	.70	-------
10	.78	1.18	1.71	1.46	-------	1.18	2.30	1.55	.94	1.38	.70	-------
11	.79	1.13	1.66	1.43	-------	1.13	2.53	1.70	.92	1.10	.70	-------
12	.80	1.10	1.70	2.28	-------	1.08	2.27	2.00	.90	.82	.70	-------
13	.78	1.07	1.67	2.74	-------	1.05	2.14	2.60	.92	.70	.70	-------
14	.77	1.05	1.57	2.37	-------	1.03	2.02	2.93	.95	.85	.80	-------
15	.76	1.03	1.52	2.11	-------	1.00	1.97	2.66	.96	.80	.73	-------
16	.75	1.01	1.45	1.82	.98	1.01	1.90	2.55	.90	.75	.69	-------
17	.76	1.00	1.41	2.20	.97	1.02	2.00	2.33	.88	.75	.69	-------
18	.75	.99	1.36	3.05	.96	1.02	2.14	2.15	.85	.75	.68	-------
19	.74	.97	1.27	2.46	.95	1.03	2.02	2.03	.86	.75	.69	-------
20	.77	.96	1.26	2.19	.94	1.04	1.75	1.98	.80	.75	.67	-------
21	.78	.95	1.27	2.03	.92	1.04	1.75	1.87	.85	.75	.62	-------
22	.78	.95	1.30	1.89	.91	1.16	1.80	1.83	.90	.75	.62	-------
23	.76	.97	1.46	1.77	.90	1.41	1.80	1.80	.83	.75	.62	-------
24	1.25	1.14	1.75	1.65	.89	1.52	1.80	1.65	.82	.75	.60	-------
25	1.82	1.24	1.80	1.52	1.10	1.75	1.80	1.57	.80	.75	.60	-------
26	2.00	1.12	1.72	1.41	.86	1.68	1.80	1.51	.82	.75	.60	-------
27	1.84	1.06	1.59	1.31	.85	1.76	1.75	1.48	.76	.75	.60	-------
28	1.58	1.08	1.46	1.22	.86	1.67	1.60	1.42	.88	.75	.60	-------
29	1.34	1.03	1.50	1.24	.87	1.72	1.54	1.40	.87	.75	.60	-------
30	1.23	1.02	1.42	1.30	-------	1.95	1.41	1.50	.88	.75	.60	-------
31	1.23	-------	1.34	1.33	-------	2.67	-------	1.55	-------	.75	.62	-------

NOTE.—Stage-discharge relation Feb. 10-15 affected by ice. Gage height Feb. 10-15 and Sept. 1-30 not observed.

Daily discharge, in second-feet, of Wallenpaupack Creek at Wilsonville, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	162	288	634	413	271	94	1,430	407	392	76	61	-------
2	137	243	784	456	271	107	934	449	300	76	61	-------
3	130	219	774	413	282	122	1,018	392	271	70	61	-------
4	122	208	634	594	260	122	934	310	255	70	61	-------
5	107	199	500	477	228	122	907	329	228	70	61	-------
6	107	195	508	477	228	172	1,066	288	208	70	61	-------
7	104	199	702	477	234	305	3,060	248	228	95	61	-------
8	90	300	811	463	199	316	3,860	204	199	94	61	-------
9	86	329	694	485	162	289	2,560	255	180	642	61	-------
10	86	260	626	434	162	262	1,166	500	146	379	61	-------
11	90	234	585	413	162	235	1,408	618	137	219	61	-------
12	94	219	618	1,146	162	208	1,136	880	130	100	61	-------
13	86	204	593	1,639	162	196	1,008	1,485	137	61	61	-------
14	83	195	516	1,239	162	184	907	1,818	150	111	94	-------
15	79	185	477	980	162	172	855	1,551	154	94	70	-------
16	76	175	427	719	162	175	793	1,430	130	76	57	-------
17	79	172	400	1,066	157	181	880	1,197	122	76	38	-------
18	76	167	367	1,989	154	181	1,008	1,018	115	76	55	-------
19	73	157	310	1,333	150	184	907	907	115	76	57	-------
20	83	154	305	1,056	146	187	658	864	94	76	46	-------
21	86	150	310	907	137	187	658	765	111	76	38	-------
22	86	150	329	784	134	248	703	727	130	76	38	-------
23	79	157	340	676	130	400	703	703	104	76	38	-------
24	300	238	561	577	126	477	703	577	100	76	32	-------
25	719	294	703	477	222	658	703	516	94	76	32	-------
26	880	228	658	400	115	600	703	470	100	76	32	-------
27	736	199	600	335	111	667	658	449	79	76	32	-------
28	524	208	500	282	115	593	539	407	122	76	32	-------
29	354	185	456	294	118	634	493	392	118	76	32	-------
30	288	180	407	329	-------	838	400	463	122	76	32	-------
31	288	-------	354	346	-------	1,562	-------	500	-------	76	38	-------

Note.—Discharge Feb. 10-15 estimated because of ice. Discharge Sept. 1-30 not determined because of no gage height record.

Monthly discharge of Wallenpaupack Creek at Wilsonville, for the year ending Sept. 30, 1924.
(Drainage area 227 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	880	73	203	0.984	1.03
November	329	150	210	.925	1.03
December	811	305	532	2.34	2.70
January	1,989	282	699	3.08	3.55
February	282	111	175	.771	.83
March	1,562	94	344	1.52	1.75
April	3,800	400	1,090	4.80	5.36
May	1,848	204	682	3.00	3.46
June	392	79	159	.701	.78
July	642	70	111	.489	.56
August	94	32	51.2	.226	.26
September					
The Year					

DELAWARE BASIN—STATION NO. 3

SHOHOLA CREEK NEAR SHOHOLA

Location.—At single-span steel highway bridge about one and three-quarters miles south of Shohola, Pike County.

Drainage Area.—82 square miles.

Records Available.—February 19, 1919, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by Walter P. Hess.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Right bank is high and not subject to overflow; left is of medium height and overflows during extremely high stages. Bed is composed of coarse gravel and large stones. Control is at the first of a series of riffles about 150 feet downstream from the gage; probably permanent.

Extremes of Stage.—Maximum stage during the year, 5.0 feet observed at 6.30 a. m. April 7 (discharge, 2,020 second-feet); minimum, 1.0 foot at 6.30 a. m. September 21 (discharge, 6.5 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined below 250 second-feet and fairly well defined between 250 and 1,000 second-feet. Gage read to tenths once daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage height to rating table. Results fair.

Cooperation.—Station is maintained in cooperation with Gannett, Seelye & Fleming, Inc., Engineers, Harrisburg, Pa.

Discharge measurements of Shohola Creek near Shohola, during the year ending Sept. 30, 1924.

No	Date	Made by	Gage height	Discharge
			Feet	Sec.-ft.
7	Sept. 18a	C. K. Weigle	1.18	10.8
8	18a	do	1.18	12.4
9	18b	do	1.18	13.6

a Measurement made by wading 50 feet downstream from the gage.
b Measurement made by wading 100 feet downstream from the gage.

Daily Mean Gage Height, in feet, of Shohola Creek near Shohola, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.3	1.9	2.4	2.1	2.1	2.3	3.5	2.4	2.4	1.6	1.1	1.1
2	1.3	1.9	2.4	2.1	2.3	2.2	3.0	2.5	2.2	1.6	1.2	1.1
3	1.2	1.8	2.3	2.2	2.3	2.2	2.4	2.3	2.1	1.6	1.2	1.2
4	1.3	1.5	2.2	2.2	2.3	2.6	2.4	2.2	2.1	1.5	1.2	1.2
5	1.2	1.5	2.4	2.3	2.2	2.0	3.0	2.1	2.0	1.5	1.2	1.1
6	1.2	1.5	2.6	2.2	2.2	2.1	3.55	2.1	2.0	1.4	1.2	1.2
7	1.3	1.4	2.6	2.2	2.2	2.1	4.8	2.1	2.0	1.4	1.2	1.2
8	1.3	1.6	2.5	2.1	2.1	2.2	4.6	2.0	2.0	1.5	1.2	1.2
9	1.2	1.6	2.4	2.1	2.1	2.2	4.15	2.0	2.1	1.6	1.2	1.2
10	1.2	1.5	2.3	2.15	2.1	2.3	3.55	2.5	2.0	1.7	1.1	1.4
11	1.3	1.4	2.2	2.8	2.0	2.2	3.4	2.6	1.9	1.8	1.2	1.4
12	1.3	1.4	2.2	3.4	2.0	2.2	3.3	2.9	1.9	1.9	1.3	1.4
13	1.3	1.5	2.2	3.45	2.0	2.2	3.0	3.1	1.9	1.6	1.3	1.3
14	1.2	1.4	2.1	3.2	1.9	2.3	2.8	3.3	1.8	1.6	1.6	1.3
15	1.2	1.3	2.0	3.0	2.1	2.3	2.7	3.3	1.8	1.5	1.5	1.1
16	1.2	1.3	2.1	3.0	2.2	2.3	2.7	3.3	1.8	1.4	1.5	1.1
17	1.2	1.2	2.1	3.4	2.2	2.3	2.5	3.0	1.8	1.4	1.5	1.2
18	1.2	1.2	2.1	3.4	2.3	2.2	2.5	2.8	1.7	1.3	1.6	1.2
19	1.3	1.2	2.0	3.0	2.4	2.2	3.0	2.8	1.7	1.3	1.6	1.1
20	1.3	1.2	2.0	3.0	2.4	1.8	3.0	2.8	1.6	1.3	1.4	1.1
21	1.3	1.1	2.0	2.9	2.4	1.8	3.0	2.9	1.5	1.3	1.5	1 0
22	1.3	1.1	1.9	2.6	2.4	1.7	2.6	2.9	1.5	1.3	1.6	1.1
23	1.45	1.1	2.2	2.5	2.5	1.7	2.6	2.8	1.4	1.3	1.2	1.3
24	1.9	1.2	2.3	2.5	2.5	1.7	2.6	2.6	1.7	1.2	1.2	1.3
25	2.1	1.3	2.3	2.4	2.7	2.5	2.5	2.5	1.6	1.2	1.2	1.3
26	2.1	1.3	2.3	2.4	2.7	2.8	2.5	2.4	1.7	1.2	1.4	1.2
27	2.1	1.6	2.3	2.3	2.6	2.8	2.4	2.4	1.7	1.2	1.4	1.2
28	2.1	1.6	2.3	2.3	2.5	2.9	2.4	2.3	1.8	1.1	1.5	1.2
29	2.0	1.5	2.2	2.2	2.4	2.9	2.4	2.3	1.9	1.1	1.5	1.3
30	2.0	2.0	2.2	2.2	-------	3.3	2.3	2.4	1.9	1.1	1.5	3.2
31	1.9	-------	2.1	2.1	-------	3.5	-------	2.4	-------	1.1	1.2	-------

Note.—Stage-discharge relation Dec. 16-18, Feb. 2-13, Feb. 15 to Mar. 5 and Mar. 10-19 affected by ice.

Daily discharge, in second-feet, of Shohola Creek near Shohola, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	19	97	218	139	139	80	735	218	218	49	9.2	9.2
2	19	97	218	139	130	89	455	250	163	49	13	9.2
3	13	79	189	163	130	90	218	189	139	49	13	13
4	19	37	163	163	120	95	218	163	139	37	13	13
5	13	37	218	189	120	110	455	139	117	37	13	9.2
6	13	37	285	163	120	139	768	139	117	27	13	13
7	19	27	285	163	120	139	1,810	139	117	27	13	13
8	19	49	250	139	120	163	1,610	117	117	37	13	13
9	13	49	218	139	110	163	1,250	117	139	49	13	13
10	13	37	189	151	110	150	768	250	117	63	9.2	27
11	19	27	163	364	95	130	673	285	97	79	13	27
12	19	27	163	673	95	120	614	408	97	97	19	27
13	19	37	163	704	95	120	455	505	97	49	19	19
14	13	27	139	558	97	120	364	614	79	49	49	19
15	13	19	117	455	95	110	323	614	79	37	37	9.2
16	13	19	120	455	95	95	323	614	79	27	27	9.2
17	13	13	120	673	95	95	250	455	79	27	37	13
18	13	13	120	673	95	90	250	364	63	19	49	13
19	19	13	117	455	95	90	455	364	63	19	49	9.2
20	19	13	117	455	90	79	455	364	49	19	27	9.2
21	19	9.2	117	408	90	79	455	408	37	19	37	6.5
22	19	9.2	97	285	90	63	285	408	37	19	49	9.2
23	32	9.2	163	250	90	63	285	364	27	19	13	19
24	97	13	189	250	80	63	285	285	63	13	13	19
25	139	19	189	218	80	250	250	250	49	13	13	19
26	139	19	189	218	80	364	250	218	63	13	27	13
27	139	49	189	189	80	364	218	218	63	13	27	13
28	139	49	189	189	80	408	218	189	79	9.2	37	13
29	117	37	163	163	80	408	218	189	97	9.2	37	19
30	117	117	163	163	-------	614	189	218	97	9.2	37	558
31	97	-------	139	139	-------	735	-------	218	-------	9.2	13	-------

Note.—Discharge Dec. 16-18, Feb. 2-13, Feb. 15 to Mar. 5 and Mar. 10-19 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Lackawaxen River near West Hawley and Bushkill Creek near Shoemakers.

Monthly discharge of Shohola Creek near Shohola, for the year ending Sept. 30, 1924.

(Drainage area 82 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	139	13	44.3	0.540	0.62
November	117	9.2	36.2	.441	.49
December	285	97	173	2.11	2.43
January	704	139	306	3.73	4.30
February	139	80	101	1.23	1.33
March	735	63	183	2.23	2.57
April	1,810	189	503	6.13	6.84
May	614	117	299	3.65	4.21
June	218	27	92.6	1.13	1.26
July	97	9.2	32.0	.390	.45
August	49	9.2	24.6	.300	.35
September	558	6.5	32.5	.396	.44
The Year	1,810	6.5	152	1.85	25.59

DELAWARE BASIN—STATION NO. 4

DELAWARE RIVER AT PORT JERVIS, N. Y.

Location.—At two-span steel highway bridge between Matamoras, Pike County, Pa., and Port Jervis, Orange County, N. Y., one and one-half miles upstream from mouth of Neversink River and six miles downstream from mouth of Mangaup River.

Drainage Area.—3,070 square miles.

Records Available.—October 12, 1904, to September 30, 1924.

Gages.—Chain on downstream side of left span of highway bridge and staff in two sections; the upper section vertical and attached to downstream end of left abutment; the lower section inclined, about 30 feet downstream. Elevation of gage zero 414.89 feet, United States Geological Survey datum. Gages read by John Bisland.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Both banks are high and do not overflow. Bed is composed of gravel; occassionally shifting.

Extremes of Discharge.—Maximum stage recorded during the year, 12.42 feet at 5 p. m. April 7 (discharge, 62,500 second-feet); minimum, 1.50 feet at 5 p. m. August 2 and on August 7 (discharge, 685 second-feet).

1904-1924: During the flood of October 10-11, 1903, a crest stage of 23.3 feet gage height was observed by Mr. Righter, City Engineer of Port Jervis. This gage height corresponds to approximately 155,000 second-feet. Maximum stage recorded 18.5 feet at 5 p. m. March 7, 1923 (stage-discharge relation affected by ice); maximum stage for open water, 16.0 feet at 8 a. m. March 28, 1914 (discharge, 92,700 second-feet); minimum stage recorded, 0.60 foot at 8 a. m. September 22 and 23, 1908 (discharge, 175 second-feet).

Ice.—Stage-discharge relation seriously affected by ice.

Accuracy.—Stage-discharge relation changed presumably at time of high water, January 12. Rating curve used before the change fairly well defined between 500 and 15,000 second-feet; that used after the change, fairly well defined between 600 and 30,000 second-feet. Stage-discharge relation affected by ice from February to March. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table,

except for days of great range in stage, when discharge is averaged for intervals of day. Records good, except during periods of ice effect and estimate, for which they are fair.

Cooperation.—Record furnished by United States Geological Survey Office, Albany, N. Y.

Discharge measurements of Delaware River at Port Jervis, N. Y., during the year ending Sept. 30, 1924.

No.	Date	Made by	Gage height	Discharge
			Feet	Sec.-ft.
85	Oct. 3	Lamson & Johnson	2.15	1,590
86	Jan. 29	A. E. Johnson	2.79	2,630
87	Apr. 9	Lamson & Harrington	8.35	29,600
88	July 26	Shupe & Harrington	1.72	896

Daily Mean Gage Height, in feet, of Delaware River at Port Jervis, N. Y., for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.45	3.0	-------	3.6	3.1	3.7	5.2	4 1	3.5	2 3	1.55	2.7
2	2.3	2.9	-------	3.5	3.0	3.5	5.1	3.9	3.4	2.3	1.5	2.4
3	2.2	2.9	-------	3.7	3.0	3.4	4.6	4.4	3.3	2.3	1.6	1.9
4	2.1	2.8	-------	4.2	3.0	3.3	4.4	4.3	3.2	2.3	1.8	1.6
5	2.0	2.8	-------	4.9	3.0	3.4	5.2	4.2	3.1	2.2	1.6	1.6
6	2.0	2.7	4.8	4.4	2.9	3.5	6.3	4.0	3.1	2 35	1.55	1.75
7	1.9	2.75	6.2	4.0	2.8	4.4	12.1	3.7	3.2	2 2	1.5	1.7
8	1.9	2.9	6.1	3.9	3.2	4.2	11.3	3 5	3.8	2 1	1.6	1.7
9	1.8	2.8	5.2	3.7	2.9	3.6	8.3	4.2	3.6	2.5	1 7	2.0
10	1.8	2.7	4.8	3.6	2.75	3.4	7.4	4.5	3.4	3.6	1.65	2.25
11	1.7	2.6	4.7	5.4	2.5	3.1	7 0	4.7	3.3	3.1	1 6	3.4
12	1.7	2.5	4.6	10.7	2.4	2.8	6.5	5.1	3.2	2.75	1.75	2 6
13	1.7	2.8	4.5	9.0	2.4	2.7	6.0	7.4	3 0	2.75	2 65	2 4
14	1.6	2.7	4.4	6.4	2.4	2.5	5.8	7 5	2.9	2 85	1 9	2.2
15	1.6	2.7	4.2	5.9	2.4	2.4	5.6	7.6	2.9	2 95	1.8	2.2
16	1.6	2.6	4.0	5.5	2.3	2.3	5 5	7.7	2.9	2.75	1.8	2.1
17	1.5	2.6	3.8	7.4	2.3	2.4	5.4	6 5	2 8	2.75	1.7	2 0
18	1.5	2.6	3.4	7 2	2.2	2.5	5.5	5 8	2.7	2 3	1.6	2.0
19	1.6	2.5	3.2	5.6	2.2	2.5	6.8	5.8	2.6	2 2	1.6	1.9
20	1.7	2.5	3.1	5.4	2.2	2.4	7.5	5.6	2.4	2.2	1.7	1.9
21	1.7	2.5	3.0	4.8	4.1	2.85	6.9	5 1	2.4	2.1	1.85	1.8
22	1.6	2.5	3.0	4.4	4.1	3.1	6.4	5.0	2.4	2.05	1.7	1 7
23	1.6	2.4	3.6	3.4	4.1	3.5	6 7	4.7	2 3	1 9	1.65	1.7
24	2.15	2.5	4.3	3.4	4.3	4.6	6.5	4.4	2.3	1 9	1.6	1.85
25	4.2	2.5	-------	3.7	4.3	5.3	6.5	4.3	2.2	1.8	1.6	1.8
26	3.9	2.5	4.3	3.4	4.2	5.1	5 6	4 2	2.1	1.7	1.7	1.8
27	3.6	2.7	4.2	3.2	4.1	5.0	5.0	4 0	2 3	1 7	1.9	1.7
28	3.4	2.8	4.0	2.85	4.0	4.8	4.6	3.9	2.4	1 7	2.65	1.65
29	3.3	2.9	3.6	2.8	3.9	4.5	4.3	3.8	2.5	1 6	2.4	1.65
30	3.2	3.1	3.2	3.0	-------	5.7	4.2	4.0	2.4	1.65	2.5	-------
31	3.0	-------	3.2	3.2	-------	5.4	-------	3.7	-------	1.65	2.6	-------

Note.—Gage height Dec. 1-5 and 25 doubtful; Sept. 30 not used. Stage-discharge relation Feb. 2 to Mar. 8 affected by ice.

Daily discharge, in second-feet, of Delaware River at Port Jervis, N. Y., for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,120	3,330	}	5,010	3,400	1,100	10,700	6,350	4,430	1,720	732	2,470
2	1,840	3,090		4,710	3,200	1,100	10,300	5,680	4,180	1,720	685	1,890
3	1,670	3,090	13,000	5,310	3,000	1,100	8,200	7,430	3,910	1,720	780	1,100
4	1,510	2,850		6,990	3,000	1,000	7,430	7,060	3,650	1,720	990	780
5	1,360	2,850	}	9,750	2,800	1,600	10,700	6,760	3,400	1,550	780	7.0
6	1,360	2,630	9,330	7,730	2,600	2,400	16,200	6,010	3,400	1,800	732	995
7	1,220	2,740	16,000	6,290	2,830	5,500	59,900	5,050	3,650	1,550	685	880
8	1,220	3,090	15,600	5,950	3,200	6,500	53,400	4,460	5,360	1,390	780	880
9	1,090	2,850	11,100	5,310	2,600	4,750	29,700	6,700	4,750	2,070	880	1,240
10	1,090	2,630	9,330	5,010	2,400	4,180	23,200	7,810	4,180	4,750	830	1,640
11	970	2,410	8,910	12,000	1,900	3,400	20,500	8,600	3,910	3,400	780	4,180
12	970	2,210	8,510	49,100	1,700	2,630	17,400	10,3 0	3 650	2,3 0	935	2.260
13	970	2,850	8,110	35,000	1,600	2,470	14,600	23,200	3,100	1,980	2,300	1.8 0
14	860	2,630	7,720	16,800	1,600	2,070	13,600	23,600	2.920	2,830	1,110	1,550
15	860	2,630	6,990	14,100	1,500	1,890	12,600	24,600	2,920	3,040	980	1,550
16	860	2,410	6,290	12,100	1,400	1,720	12,100	25,3 0	2,900	2,580	900	1,3.0
17	760	2,410	5,630	23,200	1,300	1,890	11,600	17,400	2,690	1,980	890	1,240
18	760	2,410	4,410	21,800	1,200	2,070	12,100	13,600	2,470	1,720	780	1,240
19	860	2,210	3,850	12,600	1,200	2,070	19,200	13,600	2,260	1,550	780	1,110
20	970	2,210	3,590	11,600	1,200	1,890	23,900	12,600	1,890	1,550	880	1,110
21	970	2,210	3,330	9.010	1,100	2,800	19,800	10,300	1,890	1,390	1,050	990
22	860	2,210	3,330	7.430	1,100	3,400	16,800	9,840	1.890	1,320	880	880
23	860	2,020	5,010	4,180	1,100	4,460	18,600	8,600	1,720	1,110	830	880
24	1,560	2,210	7,350	4,180	1,100	8,200	17,400	7,430	1,720	1,110	780	1,050
25	6,990	2,210	8,510	5,050	1,100	11,200	17,400	7,060	1,550	990	780	990
26	5,950	2,210	7,350	4,180	1,100	10,300	12,600	6,700	1,390	830	880	990
27	5,010	2,630	6.990	3,600	1,100	9.840	9,840	6,010	1,720	880	1,110	880
28	4,410	2,850	6,290	2,800	1,100	9,010	8,200	5,680	1,800	880	2,300	830
29	4,130	3,090	5,010	2,690	1,100	7,810	7,060	5,360	2,070	780	1,890	830
30	3,850	3,590	3,850	3,100	-------	13,100	6,700	6,010	1,890	830	2,070	11,900
31	3,330	-------	3,850	3,650	-------	11,000	-------	5,050	-------	830	2,260	-------

Note.—Braced figures show mean discharge for period included. Discharge Dec. 1-5 estimated at 13,000 second-feet and Dec. 25, as indicated in above table, by comparison with records of stations in the same drainage; gage readings doubtful. Discharge Feb. 2 to Mar. 8, determined from gage heights corrected for ice effect from study of gage height graph and weather records, and comparison with records of stations in the same drainage. Discharge, Sept. 30, determined by averaging discharge for intervals of the day.

Monthly discharge of Delaware River at Port Jervis, N. Y., for the year ending Sept. 30, 1925.

(Drainage area 3,070 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	6,990	760	1,980	0.645	0.74
November	3,590	2,020	2,630	.857	.96
December	16,200	3,330	8,110	2.64	3.04
January	49,100	2,690	10,360	3.36	3.87
February	3,400	1,100	1,850	.603	.65
March	13,100	1,000	4,620	1.50	1.73
April	59,900	6,700	17,400	5.67	6.33
May	25,300	4,460	10,100	3.29	3.79
June	5,360	1,390	2,920	.951	1.06
July	4,750	780	1,740	.567	.65
August	2,360	685	1,070	.349	.40
September	11,900	780	1,680	.547	.61
The Year	59,900	685	5,380	1.75	23.83

DELAWARE BASIN—STATION NO. 5

BUSHKILL CREEK NEAR SHOEMAKERS

Location.—At single-span steel highway bridge, about three-quarters of a mile northwest of Shoemakers, Monroe County.

Drainage area.—115 square miles.

Records Available.—September 19, 1908, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by Walter C. Haywood.

Discharge Measurements.—Made from upstream side of bridge or by wading.

Channel and Control.—Banks are high and not subject to overflow. Bed is composed of gravel and boulders. Control is at the first of a series of riffles, a short distance downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 5.5 feet at 10 p. m. September 30, (discharge, about 1,800 second-feet); minimum, 1.00 foot from 7 a. m. October 16 to 7 a. m. October 19, on August 31 and several times in September (discharge, 21 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined between 20 and 300 second-feet and fairly well defined from 300 to 800 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for medium and high stages when they are fair.

The following discharge measurement was made by C. K. Weigle: No. 41, September 27: Gage height, 109 feet; discharge, 22.2 second-feet. Measurement made by wading 200 feet upstream from the gage.

Daily Mean Gage Height, in feet, of Bushkill Creek near Shoemakers, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.18	1.47	2.48	2.03	2.18	2.08	2.88	2.38	2.36	1.55	1.16	1.00
2	1.15	1.44	2.39	1.98	2.15	2.04	2.80	2.30	2.28	1.50	1.13	1.00
3	1.14	1.40	2.32	2.14	2.08	1.90	2.72	2.26	2.24	1.55	1.16	1.05
4	1.11	1.39	2.25	2.13	2.04	1.90	2.76	2.20	2.24	1.48	1.15	1.04
5	1.10	1.37	2.27	2.16	2.04	1.9_	2.88	2.18	2.19	1.44	1.14	1.00
6	1.06	1.36	2.49	2.24	2.00	2.04	3.61	2.12	2.12	1.40	1.10	1. 2
7	1.05	1.39	2.58	2.31	2.04	2.06	4.82	2.08	2.16	1.40	1.10	1.09
8	1.05	1.48	2.42	2.35	1.95	2.00	3.99	2.15	2.08	1.63	1.10	1.07
9	1.05	1.48	2.36	2.36	1.83	2.00	3.44	2.42	2.08	2.16	1.08	1.12
10	1.05	1.44	2.30	2.40	1.97	1.97	3.39	2.63	2.00	2.00	1.04	1.31
11	1.06	1.40	2.27	3.26	2.01	1.92	3.31	2.60	1.96	1.79	1.04	1.34
12	1.05	1.38	2.20	3.82	1.97	1.86	3.12	2.96	1.90	1.64	1.46	1.17
13	1.05	1.38	2.17	3.48	1.96	1.80	2.97	3.68	1.94	1.59	1.51	1. 2
14	1.05	1.34	2.14	3.16	2.08	1.77	2.79	3.36	1.91	1.54	1.38	1.16
15	1.02	1.33	2.08	2.88	2.22	1.72	2.68	3.42	1.88	1.49	1.30	1.08
16	1.00	1.33	2.03	2.97	2.00	1.72	2.52	3.33	1.8_	1.4	1.19	1.05
17	1.00	1.32	1.99	3.88	2.06	1.71	2.48	3.17	1.78	1.40	1.18	1.05
18	1.00	1.30	1.94	3.30	2.03	1.72	2.52	2.98	1.75	1.37	1.18	1.04
19	1.01	1.30	1.88	3.60	2.06	1.80	3.02	2.90	1.7_	1.32	1.11	1.04
20	1.15	1.30	1.80	3.48	2.24	1.83	2.91	2.83	1.68	1.30	1.13	1.90
21	1.15	1.28	1.85	3.38	2.36	1.96	2.76	2.79	1.6_	1.28	1.14	1.00
22	1.14	1.27	1.92	3.28	2.40	1.93	2.72	2.76	1.64	1.2_	1.14	1.04
23	1.29	1.28	2.2_	3.16	2.36	2.06	2.78	2.6_	1.59	1.30	1.10	1.27
24	1.82	1.53	2.38	3.04	2.27	2.21	2.68	2.52	1.62	1. 8	1.1_	1. 6
25	2.10	1.52	2.29	2.89	2.18	2.38	2.59	2.45	1.56	1.26	1.12	1.20
26	1.90	1.50	2.18	2.64	2.02	2.45	2.52	2.76	1.60	1.24	1.25	1.14
27	1.74	1.50	2.12	2.4_	2.08	2.42	2.46	2.64	1.58	1.22	1.16	1.10
28	1.68	1.48	2.11	2.31	2.03	2.46	2.39	2.52	1.60	1.19	1.08	1.08
29	1.62	1.42	2.12	2.24	2.04	2.29	2.32	2.45	1.6_	1.1_	1.05	1.17
30	1.50	2.60	2.07	2.26	-------	2.28	2.36	2.33	1.6_	1.18	1.04	3.97
31	1.50	-------	2.05	2.20	-------	2.98	-------	2.44	-------	1.16	1.00	-------

Note.—Stage-discharge relation Jan. 5-10, 19-31, Feb. 7-10 and Feb. 13 to Mar. 5 affected by ice.

Daily discharge, in second-feet, of Bushkill Creek near Shoemakers, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	33	59	306	192	256	95	593	349	339	60	31	21
2	30	55	353	174	234	95	546	311	302	62	31	21
3	30	51	320	238	212	90	499	293	283	62	31	24
4	28	50	288	279	196	85	522	265	283	61	30	23
5	27	48	297	220	196	120	593	256	260	55	30	21
6	25	47	400	160	216	196	962	239	239	52	27	22
7	24	50	452	160	140	204	1,500	212	247	51	27	26
8	24	60	367	150	160	180	1,110	24_	212	82	27	25
9	24	60	339	160	95	180	828	367	212	24_	26	28
10	24	55	311	220	120	170	828	476	180	180	23	43
11	25	51	297	781	181	154	781	452	167	118	23	37
12	24	49	265	1,0_0	170	137	687	6 6	148	84	58	32
13	24	49	252	875	130	120	616	969	161	75	63	28
14	24	46	238	734	110	113	546	828	161	68	49	27
15	22	45	212	593	95	101	499	8.8	142	61	42	26
16	21	45	192	593	85	101	405	781	728	55	33	24
17	21	44	177	1,060	75	98	396	734	115	51	33	24
18	21	42	161	1,020	75	101	405	640	108	48	33	23
19	23	42	142	900	75	120	640	593	96	44	30	23
20	30	42	145	650	85	128	593	570	92	42	29	21
21	30	40	134	460	90	148	522	546	92	40	30	21
22	30	40	154	320	95	158	499	522	84	40	30	23
23	41	40	274	200	85	204	546	476	75	42	27	40
24	126	66	349	240	75	258	499	405	80	40	27	29
25	220	65	306	380	75	349	452	522	70	39	28	34
26	148	62	256	349	80	382	405	499	76	37	38	30
27	106	62	229	240	85	367	386	476	73	36	31	27
28	92	60	224	200	90	386	353	405	94	33	26	26
29	80	53	229	190	95	452	344	382	92	33	24	22
30	62	180	208	190	-------	516	339	438	84	33	23	1,110
31	62	-------	200	240	-------	640	-------	377	-------	31	21	-------

Note.—Discharge Jan. 5-10, 19-31, Feb. 7-10 and Feb. 13 to Mar. 5 estimated, because of ice, from weather records, study of gage height graph and camparison with similar studies for McMichaels Creek near Stroudsburg and Lehigh River at Tannery.

Monthly discharge of Bushkill Creek near Shoemakers, for the year ending Sept. 30, 1924.

(Drainage area 115 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	220	21	48.4	0.421	0.49
November	180	40	55.3	.481	.54
December	452	134	263	2.29	2.64
January	1,060	150	427	3.71	4.28
February	256	75	125	1.09	1.18
March	640	90	210	1.83	2.11
April	1,500	334	595	5.17	5.77
May	969	212	485	4.22	4.86
June	339	70	156	1.36	1.52
July	247	31	63.8	.555	.64
August	63	21	31.6	.275	.32
September	1,110	21	63.4	.551	.61
The Year	1,500	21	211	1.83	24.96

DELAWARE BASIN—STATION NO. 6

McMICHAELS CREEK NEAR STROUDSBURG

Location.—At single-span steel railroad bridge, Wilkes-Barre & Eastern R. R. car shops, about three-quarters of a mile southwest of Stroudsburg, Monroe County.

Drainage Area.—62 square miles.

Records Available.—August 10, 1911, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by H. Q. Snyder.

Discharge Measurements—Made from downstream side of bridge or by wading.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of silt and stones. Control for medium and low stages is at a gravel and boulder bar, where the stream has a pronounced fall, about 600 feet downstream from the gage; practically permanent.

Extremes of Discharge.—Maximum stage during the year, 7.42 feet observed at 4 p. m. September 30 (discharge, about 2,000 second-feet); minimum, 2.32 feet at 11 a. m. October 5 and 10.50 a. m. October 8 (discharge, 13 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined between 25 and 300 second-feet and fairly well defined from 300 to 800 second-feet. Gage read

to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for medium and high stages when they are fair.

Daily Mean Gage Height, in feet, of McMichaels Creek near Stroudsburg, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.37	2.54	3.74	3.22	3.27	2.91	3.37	3.24	3.23	2.91	2.83	2.67
2	2.34	2.50	-------	3.20	3.23	2.85	3.26	3.23	3.20	2.88	2.84	2.65
3	2.37	2.48	3.30	3.71	-------	2.83	3.19	3.20	3.18	2.83	2.85	2.60
4	2.36	-------	3.12	3.46	3.21	2.85	3.33	-------	3.38	2.85	2.83	2 62
5	2.33	2.48	3.31	3.34	3.30	2.85	3.56	3.16	3.19	2.82	2.84	2 66
6	2.35	2.50	3.82	3.50	3.43	3.48	-------	3.10	3.12	-------	2.81	2 69
7	-------	2.57	3.43	3.13	3.20	3.45	5.64	3.00	3.08	2.80	2.81	-------
8	2.33	2.56	3.34	3.13	3.01	3.40	5.49	3.14	3.06	3.12	2.81	2.65
9	2.34	2.55	-------	3.14	2.85	-------	4.19	3.67	-------	3.42	2.81	2.81
10	2.35	2.55	3.28	3.17	-------	3.39	4.09	3.61	-------	3.36	-------	2.85
11	2.33	2.56	3.20	4.48	2.82	3.38	3.87	-------	-------	3.22	2.83	2.65
12	2.33	2.53	3.03	4.20	2.93	3.35	3.71	4.93	-------	3.14	3.18	2.64
13	2.35	2.46	3.08	-------	3.25	3.29	3.67	4.81	-------	3.10	2.92	-------
14	2.35	2.43	3.08	3.75	2.99	3.19	3.54	4.54	-------	-------	2.84	2.66
15	2.30	2.45	3.08	3.54	2.94	3.13	3.45	4.43	-------	3.04	2.82	2.63
16	2.43	2.47	3.07	3.81	2.93	3.14	3.43	4.17	3.00	3.01	2.81	2.62
17	2.37	2.47	3.02	4.87	-------	3.12	3.42	4.07	2.97	3.05	-------	2.59
18	2.35	-------	2.93	4.58	2.95	3.06	3.51	4.02	2.94	3.03	2.90	2.54
19	2.37	2.48	2.89	4.14	2.96	3.06	3.77	3.95	2.91	2.96	2.80	2.56
20	2.43	2.45	2.90	3.98	3.18	3.10	-------	-------	2.91	-------	2.85	2.60
21	-------	2.45	2.89	3.80	3.19	3.13	3.66	3.87	2.84	2.90	2.7	-------
22	2.42	2.49	2.90	3.61	3.18	3.14	3.64	3.72	-------	2.91	2.72	2.92
23	2.54	2.56	-------	3.54	3.14	-------	3.58	3.51	2.83	2.99	2.72	2.89
24	3.88	2.87	3.43	3.41	-------	3.14	3.52	3.42	2.86	-------	-------	2.70
25	4.16	2.72	3.34	3.94	3.12	3.12	3.44	-------	2.83	-------	2.79	2.63
26	3.96	2.59	3.31	3.64	3.08	3.14	3.37	3.25	3.04	-------	2.76	2.68
27	3.74	2.62	3.31	-------	3.08	3.30	3.31	3.20	3.03	-------	2.74	2.70
28	3.10	2.52	3.35	3.50	3.07	3.33	3.26	3.26	2.95	2.81	2.63	-------
29	2.62	2.47	3.19	3.47	2.90	3.23	3.26	3.25	3.00	2.80	2 63	2.81
30	2.58	3.64	3.20	3.25	-------	-------	3.23	3.24	2.95	2.83	2.64	6.16
31	2.55	-------	3.22	3.31	-------	3.43	-------	3.21	-------	2.83	-------	-------

Note.—Gage height not observed on days of no record. Stage-discharge relation Feb. 16 to Mar. 1 affected by ice.

Daily discharge, in second-feet, of McMichaels Creek near Stroudsburg, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	14	21	198	88	96	40	114	91	90	49	41	28
2	13	19	130	85	90	43	95	90	85	46	42	26
3	14	18	101	185	88	41	84	85	82	41	43	24
4	14	18	74	131	87	44	106	85	117	42	41	25
5	13	18	103	108	101	43	150	79	84	40	42	28
6	14	19	211	85	185	125	500	71	74	39	39	29
7	14	22	125	75	85	129	952	59	69	38	39	28
8	13	22	108	75	60	119	902	77	66	74	39	27
9	13	22	103	77	43	118	343	173	70	113	39	39
10	14	22	98	81	42	117	307	161	65	112	40	43
11	13	22	85	457	40	115	226	160	65	88	41	27
12	13	20	66	343	51	110	185	623	65	77	82	26
13	14	17	69	260	85	99	173	580	65	71	50	27
14	14	16	69	198	58	84	150	457	75	68	42	28
15	15	17	69	150	52	75	129	438	70	64	40	26
16	16	18	67	226	44	77	125	325	59	60	39	25
17	14	18	61	673	42	74	123	290	56	65	44	24
18	14	18	51	380	42	66	139	272	52	61	48	21
19	14	18	47	325	40	66	198	256	51	55	38	22
20	16	17	48	272	40	71	180	241	49	52	38	24
21	16	17	47	211	40	75	173	226	42	48	35	20
22	16	19	58	161	38	77	173	185	42	48	32	50
23	21	22	120	150	38	77	161	179	41	58	32	47
24	240	45	125	121	38	77	139	123	44	50	31	30
25	325	32	108	256	38	74	127	108	41	44	30	26
26	256	24	102	173	40	77	114	93	64	42	28	29
27	198	25	103	156	40	101	103	101	63	42	26	30
28	71	20	110	139	40	106	95	95	54	39	26	24
29	25	18	99	133	40	95	95	93	59	38	26	39
30	23	173	85	93	-------	95	90	91	54	39	26	1,210
31	22	-------	88	103	-------	125	-------	91	-------	41	27	-------

Note.—Discharge estimated, because of no gage height record, Oct. 7, 21, Nov. 4, 18, Dec. 9, Jan. 27, Feb. 3, 10, Mar. 9, 23, Apr. 20, May 4, 20, 25, June 22, July 6, 14, 20, Aug. 10, 17, 24, 31, Sept. 7, 13, and 28 by interpolation: Dec. 2, 23, Jan. 13, Mar. 30, Apr. 6, May 11 and Sept. 21, from gage height graph, and June 9-15 and July 24-27 from discharge of Bushkill Creek near Shoemakers and Lehigh River at Tannery. Discharge Feb. 16 to Mar. 1, estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Bushkill Creek near Shoemakers and Lehigh River at Tannery.

Monthly discharge of McMichaels Creek near Stroudsburg, for the year ending Sept. 30, 1924.

(Drainage area 62 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	325	13	48.1	0.776	0.89
November	173	16	25.9	.418	.47
December	211	47	94.5	1.52	1.75
January	623	75	191	3.08	3.55
February	125	38	57.3	.924	1.00
March	129	40	85.0	1.37	1.58
April	252	84	215	3.47	3.87
May	623	59	192	3.10	3.57
June	117	41	63.8	1.03	1.15
July	123	38	56.6	.913	1.05
August	82	26	38.3	.618	.71
September	1,280	20	71.1	1.15	1.28
The Year	1,280	13	95.1	1.53	20.87

DELAWARE BASIN—STATION NO. 7

DELAWARE RIVER AT BELVIDERE, N. J.

Location.—At Belvidere, Warren County, just down stream from the mouth of Pequest River.

Drainage Area.—4,540 square miles.

Records Available.—October 27, 1922, to September 30, 1924.

Gage.—Inclined staff on left bank bolted to downstream side of storm sewer outlet at foot of second Street, Belvidere; read by Alexander Rush.

Discharge Measurements.—Made by boat 1,000 feet down stream from the gage for low water and from highway bridge one half mile upstream during high water. Pequest River measured separately when highway bridge is used.

Channel and Control.—Channel is heavy gravel and boulders. Control is ledge and boulders, about three quarters of a mile down stream from the gage, known as Little Foul Rift.

Extremes of Discharge.—Maximum stage recorded during the year 18.02 feet at 6 p. m. April 7 (discharge, about 127,000 second-feet); minimum stage recorded 2.60 feet all day September 5 (discharge, 1,010 second-feet).

1922-1924; Maximum stage recorded, 18.02 feet at 6 p. m. April 7, 1924; (discharge, about 127,000 second-feet); minimum stage recorded 2.45 feet in July and August 1923 (discharge, 895 second-feet).

Ice.—Stage-discharge relation affected by ice only during extremely cold periods.

Accuracy.—Stage-discharge relation permanent. Rating curve well defined between 900 and 24,000 second-feet. Gage read to half-tenths twice daily. Daily discharge ascertained by applying mean daily gage height to rating table. Results good.

Cooperation.—Record furnished by United States Geological Survey Office, Trenton, N. J.

The following discharge measurement was made by Otto Lauterhahn: September 26: Gage height, 3.16 feet; discharge, 1,690 second-feet.

Daily Mean Gage Height, in feet, of Delaware River at Belvidere, N. J., for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.62	4.38	7.62	5.42	5.28	3.75	8.55	6.10	5.38	4.20	2.94	2.98
2	3.50	4.55	9.50	5.30	5.15	3.75	7.56	6.44	5.35	3.99	2.91	2.88
3	3.38	4.38	7.98	5.72	5.22	3.70	6.94	6.65	5.20	3.85	2.82	2.76
4	3.28	4.45	7.12	5.92	5.04	3.75	6.85	6.26	5.18	3.74	2.79	2.68
5	3.18	4.10	6.62	6.35	5.12	4.00	7.40	6.40	5.00	3.68	2.92	2.60
6	3.12	4.02	6.90	5.85	5.22	4.62	8.66	6.78	4.92	3.54	2.92	2.68
7	3.10	4.00	8.38	5.45	4.90	5.12	15.51	6.29	4.92	3.42	2.86	2.76
8	3.08	4.08	8.22	5.30	4.80	5.50	16.85	6.14	5.02	3.54	2.76	2.88
9	3.00	4.45	7.38	5.45	4.85	5.72	12.35	6.38	5.42	4.02	2.68	2.98
10	2.98	4.52	6.90	5.52	4.45	5.52	10.52	6.92	5.12	4.88	2.72	3.30
11	2.94	4.40	6.70	6.95	4.25	5.30	9.82	7.02	4.92	4.72	2.81	3.46
12	2.90	4.22	6.60	13.15	4.20	5.28	9.16	7.62	4.78	4.30	3.13	4.42
13	2.90	4.12	6.48	10.55	4.05	5.10	8.40	10.42	4.62	3.96	3.28	3.98
14	2.90	4.08	6.20	9.25	4.00	5.02	7.96	10.45	4.60	3.74	3.22	3.65
15	2.85	4.00	6.05	8.05	4.00	4.92	7.98	10.10	4.55	4.10	3.22	3.46
16	2.85	3.92	5.82	7.15	4.00	4.60	7.98	10.58	4.45	4.16	3.10	3.33
17	2.80	3.85	5.52	9.35	4.00	4.38	7.45	9.35	4.32	3.96	2.98	3.29
18	2.75	3.80	5.38	10.55	4.10	4.50	7.34	8.60	4.22	3.80	2.98	3.22
19	2.70	3.75	5.15	8.82	4.05	4.55	8.75	8.15	4.08	3.57	2.78	3.11
20	2.82	3.75	5.00	7.80	3.62	4.68	9.80	7.98	4.02	3.50	2.72	3.01
21	2.80	3.75	5.00	7.30	3.32	4.92	9.10	7.50	3.95	3.40	2.76	2.95
22	2.75	3.72	4.95	6.48	3.95	4.98	8.52	7.20	3.95	3.34	2.84	2.94
23	2.91	3.72	5.52	5.25	4.00	5.25	8.95	6.88	3.85	3.26	2.98	2.98
24	3.75	3.95	6.45	5.35	4.02	5.90	8.84	6.52	3.92	3.22	2.94	3.00
25	4.90	4.10	6.82	5.78	3.92	7.01	8.02	6.62	3.88	3.09	2.86	3.06
26	6.65	4.28	6.35	6.15	3.80	7.03	7.48	6.38	3.80	3.02	2.70	3.16
27	5.85	4.22	5.90	5.55	3.78	6.74	7.05	6.12	3.80	2.97	2.86	3.14
28	5.20	4.10	5.80	5.10	3.78	6.49	6.68	5.86	4.05	3.03	3.66	2.91
29	4.82	4.12	5.80	4.95	3.75	6.52	6.40	5.80	4.00	2.99	3.52	2.98
30	4.55	4.75	5.70	5.00	-------	7.70	6.22	6.08	3.92	2.95	3.42	7.20
31	4.40	-------	5.50	5.25	-------	8.60	-------	5.65	-------	2.96	3.25	-------

Daly discharge, in second-feet, of Delaware River at Belvidere, N. J., for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,290	3,960	16,400	6,840	6,520	2,660	22,100	9,800	6,840	3,400	1,360	1,4 0
2	2,120	4,470	28,100	6,520	6,200	2,660	16,400	10,600	6,840	3,060	1,310	1,310
3	1,960	3,960	18,600	7,860	6,200	2,470	12,900	11,600	6,200	2,6 0	1,200	1,150
4	1,810	3,960	13,900	8,600	5,600	2,660	12,400	10,200	6,200	2,470	1,200	1,100
5	1,670	3,270	11,600	10,600	5,900	3,060	15,400	10,600	5,600	2,470	1,310	1,010
6	1,540	3,060	12,900	8,220	6,200	4,470	22,800	12,400	5,310	2,120	1,310	1,100
7	1,540	3,060	20,900	6,840	5,310	5,900	89,000	10,200	5,310	1,960	1,260	1,150
8	1,540	3,270	19,700	6,520	5,020	7,180	106,000	9,400	5,600	2,120	1,150	1,310
9	1,420	3,960	15,400	6,840	5,020	7,860	52,900	10,600	6,840	3,060	1,100	1,420
10	1,420	4,210	12,900	7,180	3,960	7,180	35,800	12,900	5,900	5,310	1,100	1,810
11	1,360	3,960	12,000	13,400	3,490	6,520	30,200	13,400	5,310	4,740	1,200	2,120
12	1,310	3,490	11,600	60,600	3,490	6,520	26,000	16,400	5,020	3,720	1,540	3,960
13	1,310	3,270	11,100	36,400	3,060	5,900	20,900	34,800	4,470	3,060	1,810	3,060
14	1,310	3,270	9,800	26,000	3,060	5,600	18,600	34,800	4,470	2,470	1,670	2,290
15	1,260	3,060	9,000	18,600	3,060	5,310	18,600	32,400	4,470	3,2 0	1,670	2,120
16	1,260	2,860	8,220	14,400	3,060	4,470	18,600	36,400	3,960	3,490	1,540	1,810
17	1,200	2,660	7,180	27,400	3,060	3,960	15,400	27,400	3,720	3,060	1,420	1,810
18	1,150	2,660	6,840	36,400	3,270	4,210	14,900	22,100	3,490	2,660	1,420	1,670
19	1,100	2,660	6,200	23,400	3,060	4,470	22,800	19,700	3,270	2,1 0	1,200	1,540
20	1,200	2,660	5,600	17,400	2,290	4,740	39,200	18,600	3,060	2,120	1,100	1,420
21	1,200	2,660	5,600	14,900	1,810	5,310	25,400	15,900	3,060	1,960	1,150	1,360
22	1,150	2,470	5,600	11,100	3,060	5,600	21,500	14,400	3,060	1,810	1,200	1,3 0
23	1,310	2,470	7,180	6,200	3,060	6,200	24,700	12,900	2,660	1,810	1,420	1,420
24	2,660	3,060	10,600	6,840	3,060	8,600	23,400	11,100	2,800	1,6 0	1,360	1,420
25	5,310	3,270	12,400	8,220	2,860	13,400	18,600	11,000	2,800	1,5 0	1,260	1,540
26	11,600	3,720	10,600	9,800	2,660	13,400	15,900	10,600	2,660	1,4 0	1,100	1,670
27	8,220	3,490	8,600	7,520	2,660	12,000	13,400	9,400	2,660	1,360	1,260	1,5 0
28	6,200	3,270	8,220	5,900	2,660	11,100	12,000	8,600	3,060	1,420	2,470	1,310
29	5,020	3,270	8,220	5,600	2,660	11,100	10,600	8,220	3,060	1,420	2,120	1,420
30	4,470	5,020	7,860	5,600	-------	16,900	9,800	9,400	2,860	1,360	1,9 0	14,400
31	3,960	-------	7,180	6,200	-------	22,100	-------	7,520	-------	1,360	1,670	-------

Monthly dscharge of Delaware River at Belvidere, N. J., for the year ending Sept. 30, 1924.
(Drainage area 4,540 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	11,600	1,100	2,610	0.575	0.66
November	5,020	2,470	3,350	.738	.82
December	28,100	5,600	11,300	2.49	2.87
January	60,600	5,600	14,100	3.11	3.58
February	6,520	1,810	3,840	.846	.91
March	22,100	2,470	7,210	1.59	1.83
April	106,000	9,800	25,900	5.70	6.36
May	34,800	7,520	15,600	3.44	3.97
June	6,840	2,660	4,360	.960	1.07
July	5,310	1,360	2,470	.544	.63
August	2,470	1,100	1,420	.313	.36
September	14,400	1,010	2,070	.456	.51
The Year	106,000	1,010	7,860	1.73	23.57

DELAWARE BASIN—STATION NO. 8

LEHIGH RIVER AT TANNERY

Location.—At single-span steel highway bridge, Tannery, Carbon County.

Drainage Area.—335 square miles.

Records Available.—June 23, 1914, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by G. D. Heimbach. Elevation of gage zero 1,029.41 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of gravel and large stones. Control is at a riffle about 300 feet down stream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 13.2 feet at 10 p.m September 30 (discharge, about 26,000 second-feet); minimum, 2.35 feet at 8 a. m. August 31 (discharge, 92 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined between 130 and 1,000 second-feet and fairly well defined from 1,000 to 3,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for extreme stages when they are fair.

The following discharge measurement was made by H. J. McIntyre: No. 26, August 13: Gage height, 3.37 feet; discharge, 315 second-feet.

Daily Mean Gage Height in feet, of Lehigh River at Tannery, for the year endng Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.32	3.82	5.18	4.19	3.88	3.41	5.58	4.38	4.48	3.28	2.78	2.55
2	3.15	3.76	4.90	3.95	3.84	3.39	5.00	4.39	4.38	3.26	2.65	2.66
3	3.08	3.55	4.48	4.35	3.84	3.41	4.95	4.32	3.92	3.32	2.60	2.62
4	3.02	3.25	4.25	4.55	3.90	3.39	4.85	4.18	3.75	3.26	2.75	2.65
5	2.98	3.20	4.11	4.28	3.82	3.42	4.85	4.04	3.72	3.22	2.72	2.68
6	2.98	3.25	4.65	4.02	3.82	3.75	6.62	3.95	3.72	3.06	2.72	2.69
7	2.96	3.35	4.82	4.19	3.76	3.82	8.85	3.91	3.84	3.11	2.72	2 62
8	2.92	3.74	4.55	4.18	3.71	3.79	7.30	3.91	3.82	3.36	2.77	2.72
9	2.94	3.59	4.32	4.04	3.55	3.74	6.60	4.45	3.88	4.96	2.65	3.13
10	2.94	3.42	4.25	3.99	3.55	3.69	5.94	4.69	3.82	4.80	2.45	3.25
11	3.02	3.34	4.22	6.48	3.68	3.66	5.68	4.74	3.77	4,25	2.72	3.34
12	2,98	3.28	4.18	7.05	3.48	3.58	5.52	5.72	3.74	4.00	3.35	3.24
13	2.92	3.28	4.16	6.55	3.32	3.59	5.40	6.15	3.72	3.84	3.34	3.11
14	2.72	3.26	4.18	5.62	3.39	3.52	5.05	5.82	4.05	3.80	3.27	2.75
15	2.88	3.22	4.08	5.20	3.71	3.42	4.75	6.02	3.72	3.55	3.14	2.74
16	2.80	3.21	3.96	5.43	3.55	3.32	4.62	5.72	3.60	3.42	2.98	2.69
17	2.79	3.20	3.99	6.92	3.54	3.34	4.55	5.32	3.52	3.32	2.96	2.68
18	2.82	3.22	3.85	6.50	4.02	3.39	4.75	5.22	3.49	3.22	3.12	2.69
19	2.70	3.18	3.68	5.85	4.22	3.43	5.22	5.28	3.39	3.08	2.99	2.69
20	3.32	3.12	3.68	5 40	4.05	3.52	5.18	5.20	3.36	2.85	2.96	2.53
21	3.35	3.11	3.69	4.70	4.08	3.62	5.05	5.26	3.30	2.98	2.95	2.43
22	3.29	3.08	3.82	4.35	4.60	3.66	5.15	5.31	3.30	2.94	2.92	2.86
23	3.30	3.09	5.00	4.45	4.62	3.71	5.21	4.95	3.28	3.08	2.83	2.94
24	4.89	3.32	5.28	4.38	4.60	4.10	5.05	4.91	3.26	3.02	2.56	2 93
25	5.49	3.29	4.98	4.38	4.32	4.62	4.85	4.95	3.26	2.99	2.92	2.87
26	4.75	3.22	4.65	3.98	3.75	4.72	4.78	4.72	3.20	2.88	2.88	2.91
27	4.44	3.34	4.58	3.85	3.58	4.74	4.65	4.58	3.35	2.72	2.82	2.86
28	4.18	3.25	4.45	3.84	3.48	4.62	4.50	4.58	3.42	2.92	2.77	2.57
29	3.98	3.14	4.25	4.20	3.40	4.90	4.48	4.62	3.48	2.88	2.71	3.41
30	3.94	3.49	4.02	4.02	-------	6.42	4.39	4.78	3.50	2.84	2.60	10.03
31	3.88	-------	4.08	4.01	-------	6.18	-------	4.58	-------	2.86	2.40	-------

Note.—Stage-discharge relation Feb. 15 to Mar. 1 affected by ice.

Daily discharge, in second-feet, of Lehigh River at Tannery, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	303	545	1,830	830	610	320	2,330	1,000	1,090	288	146	110
2	242	515	1,490	645	578	331	1,600	1,000	1,000	281	122	124
3	218	405	1,090	955	578	340	1,600	910	610	303	115	118
4	197	278	870	1,180	610	331	1,380	830	515	281	140	122
5	186	260	750	910	545	344	1,380	715	485	267	134	127
6	186	278	1,180	680	545	515	3,870	645	485	211	134	128
7	182	315	1,380	830	515	545	8,670	610	578	228	134	118
8	174	515	1,180	830	485	545	5,190	610	545	319	144	134
9	178	430	910	715	405	515	3,870	1,040	610	1,600	122	236
10	178	344	870	680	405	485	2,750	1,280	545	1,380	100	278
11	197	311	830	3,700	485	457	2,470	1,280	515	870	134	311
12	186	288	830	4,600	371	430	2,200	2,470	515	680	315	274
13	174	288	790	3,870	303	430	2,070	3,210	485	578	311	228
14	134	281	830	2,330	331	380	1,600	2,610	715	545	284	140
15	166	267	750	1,830	280	344	1,380	2,900	485	405	239	138
16	150	264	645	2,070	220	303	1,180	2,470	430	344	186	128
17	148	260	680	4,410	190	311	1,180	1,950	380	303	182	127
18	154	267	578	3,700	200	331	1,380	1,830	376	267	232	128
19	130	253	485	2,610	240	348	1,830	1,950	331	218	188	128
20	303	232	485	2,070	240	380	1,830	1,830	319	160	182	109
21	315	228	485	1,280	260	430	1,600	1,950	295	186	180	98
22	292	218	545	955	280	457	1,830	1,950	295	178	174	162
23	295	222	1,600	1,040	260	485	1,830	1,600	288	218	156	178
24	1,490	303	1,950	1,000	220	750	1,600	1,490	281	197	111	176
25	2,200	292	1,600	1,000	220	1,180	1,380	1,600	281	188	174	164
26	1,380	267	1,180	680	240	1,280	1,380	1,280	292	166	166	172
27	1,040	311	1,180	578	280	1,280	1,180	1,180	315	134	154	162
28	830	278	1,040	578	300	1.180	1,180	1,180	344	174	144	112
29	680	239	870	830	300	1,490	1,090	1,180	371	166	132	3'0
30	645	376	680	680	-------	3,530	1,000	1,380	380	158	115	12,200
31	610	-------	750	680	-------	3,210	-------	1,180	-------	162	95	-------

Note.—Discharge Feb. 15 to Mar. 1 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Lehigh River at Bethlehem.

Monthly discharge of Lehigh River at Tannery, for the year ending Sept. 30, 1924.

(Drainage area 335 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	2,200	130	438	1.31	1.51
November	545	218	311	.928	1.04
December	1,950	485	978	2.92	3.37
January	4,600	578	1,570	4.69	5.41
February	610	190	362	1.08	1.16
March	3,530	303	750	2.24	2.58
April	8,670	1,000	2,130	6.36	7.10
May	3,210	610	1,520	4.54	5.23
June	1,090	281	472	1.41	1.57
July	1,600	134	370	1.10	1.27
August	315	95	166	.496	.57
September	12,200	98	566	1.69	1.89
The Year	12,200	95	804	2.40	32.70

DELAWARE BASIN—STATION NO. 9

LITTLE LEHIGH CREEK AT ALLENTOWN

Location.—At four-span concrete highway bridge, Lehigh Street, Allentown, Lehigh County, about 2,500 feet upstream from the confluence of Little Lehigh and Jordan Creeks.

Drainage Area.—106 square miles.

Records Available.—April 29, 1921, to September 30, 1924.

Gage.—Staff attached to downstream end of left pier; read to hundredths twice daily by Nelson Schantz; during high stages more frequently.

Discharge Measurements.—Made from downstream side of trolley bridge, which is just downstream from the gage, or by wading.

Channel and Control.—Channel is confined by retaining walls and brick buildings. Bed is composed of small gravel. Control is at a riffle a short distance downstream from gage, where the bed is composed of sand and gravel deposited July 20, 1921; shifts occasionally.

Extremes of Stage.—Maximum gage height during the year, estimated from hydrograph, 8.3 feet at 10 p. m. September 30; minimum 0.60 foot several times in October and November.

Ice.—Stage-discharge relation not affected by ice since the establishment of station.

Cooperation.—Station is maintained in cooperation with the American Steel and Wire Company.

The following discharge measurement was made by J. M. Snavely: No. 13, August 18: Gage height, 1.05 feet; discharge, 112 second feet. Measurement made by wading 10 feet downstream from the gage.

Daily Mean Gage Height, in feet, of Little Lehigh Creek at Allentown, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.71	0.67	1.07	0.99	1.06	0.99	1.13	1.25	1.10	1.06	0.99	0.89
2	.66	.67	.75	.89	1.02	1.07	1.13	1.16	1.14	1.06	.94	.93
3	.67	.71	.80	1.16	1.00	1.17	1.18	1.16	1.10	1.45	.95	.90
4	.68	.65	.75	1.13	1.00	1.44	1.26	1.14	1.10	1.14	1.00	.90
5	.68	.74	.83	.90	1.90	3.01	1.45	1.10	1.06	1.10	.97	.94
6	.72	.64	.93	.69	2.75	3.76	2.29	1.07	1.08	1.05	.97	.92
7	.63	.68	.91	.90	1.09	3.17	4.67	1.10	1.17	1.06	1.06	.91
8	.69	.65	.84	.82	1.06	1.91	2.38	1.18	1.11	1.15	.99	.91
9	.64	.69	.70	.86	.99	1.32	1.68	1.44	1.13	1.21	.93	.95
10	.65	.69	.78	.89	.99	1.42	1.51	1.32	1.07	1.06	.95	.96
11	.64	.61	.76	1.18	1.02	1.41	1.42	1.23	1.07	1.05	.98	.89
12	.66	.68	.76	1.24	1.04	2.18	1.38	1.98	1.10	1.02	1.54	.92
13	.67	.67	.72	.91	1.00	1.60	1.34	1.78	1.18	1.23	1.10	.91
14	.61	.66	.75	.95	1.00	1.32	1.32	1.41	1.38	1.11	1.05	.85
15	.75	.65	.77	.84	1.01	1.26	1.26	1.63	1.10	1.04	.98	.91
16	.66	.67	.69	1.03	1.00	1.15	1.25	1.32	1.10	1.00	.96	.88
17	.69	.69	.75	2.60	.96	1.12	1.21	1.31	1.07	1.01	.91	.89
18	.65	.63	.73	1.26	1.00	1.20	1.28	1.16	1.05	1.00	1.00	.86
19	.69	.74	.73	1.05	.97	1.18	1.80	1.36	1.05	1.01	.97	.89
20	.68	.68	.72	1.07	.97	1.16	1.35	1.23	1.14	.99	.93	.87
21	.64	.68	.73	.95	1.11	1.14	1.33	1.28	1.12	1.01	.97	.88
22	.74	.66	.94	.90	1.03	1.2[illegible]	1.[illegible]9	1.28	1.0	1.00	.93	.94
23	.78	.71	1.50	.97	.99	1.17	1.31	1.19	1.05	1.5[illegible]	.98	.95
24	1.25	.71	1.24	.95	.95	1.16	1.21	1.19	1.07	1.0	.95	.86
25	.98	.72	.89	2.33	.96	1.12	1.21	1.22	1.00	1.15	.95	.88
26	.73	.77	.91	2.60	.97	1.17	1.20	1.17	1.20	1.08	.92	.87
27	.72	.70	.82	.96	.99	1.17	1.17	1.16	1.15	1.09	.93	.85
28	.66	.67	.85	1.01	.99	1.24	1.18	1.19	1.21	1.03	.92	.80
29	.74	.66	.95	.96	.99	1.22	1.18	1.12	1.43	1.01	.90	1.04
30	.68	.91	.83	1.06	-------	1.21	1.20	1.20	1.17	1.00	.96	5.06
31	.68	-------	1.00	1.07	-------	1.11	-------	1.15	-------	1.00	.89	-------

DELAWARE BASIN—STATION NO. 10

LEHIGH RIVER AT BETHLEHEM

Location.—At nine-span steel highway bridge, three spans over the normal river channel, New Street, Bethlehem, Northampton County, about 800 feet upstream from the mouth of Monocacy Creek and about 5 miles downstream from the mouth of Jordan Creek.

Drainage area.—1,240 square miles.

Records Available.—September 22, 1902, to February 13, 1905, and April 26, 1909, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by Thomas A. Roach. Elevation of gage zero 210.64 feet, United States Geological Survey datum.

Discharge Measurments.—Made from downstream side of bridge.

Channel and Control.—Right bank is high and not subject to overflow; left is low and subject to overflow at high stages. Bed is composed of sand and gravel. Control is at a riffle about 1,000 feet downstream from the gage; shifts occasionally. Monocacy Creek enters from left just downstream from the low-water control.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 16.1 feet at midnight September 30—October 1, 1924, when the stream was rising (discharge, about 42,400 second-feet); a crest stage of 11.3 feet, estimated from hydrograph, was reached at 1 a. m. April 7 (discharge, 23,600 second-feet); minimum 1.44 feet at 8.40 a. m. October 17 (discharge, 375 second-feet).

Ice.—Stage-discharge relation seldom affected by ice.

Diversions.—During navigation season water is diverted past the gage through the Lehigh Coal and Navigation Company Canal, which follows the left bank and passes under the left span of bridge.

Accuracy.—Stage-discharge relation permanent. Rating curve well defined below 1,800 second-feet and fairly well defined between 1,800 and 31,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good for medium and high stages; only fair for low stages owing to uncertain amount of water diverted by canal.

The following discharge measurement was made by H. J. McIntyre: No. 70, August 18: Gage height, 2.46 feet; discharge, 1,260 second feet.

Daily Mean Gage Height, in feet, of Lehigh River at Bethlehem, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.73	2.46	5.09	3.53	3.30	2.35	4.48	3.42	3.31	3.24	2.07	1.72
2	1.66	2.34	4.27	3.35	3.40	2.47	4.04	3.34	3.21	3.12	1.99	1.76
3	1.64	2.24	3.80	3.63	3.10	2.53	3.87	3.16	3.11	3.00	1.95	1.78
4	1.62	2.08	3.39	4.17	3.00	2.45	3.93	3.06	3.00	2.91	1.95	1.84
5	1.51	1.95	3.46	3.95	3.41	2.89	4.41	2.96	2.87	2.76	2.03	1.76
6	1.48	1.90	3.81	3.42	4.24	4.09	6.09	2.72	2.79	2.66	1.97	1.78
7	1.54	1.94	4.36	-------	3.08	4.26	10.28	2.70	2.87	2.60	1.84	1.90
8	1.54	1.97	4.08	3.59	2.90	3.60	7.88	2.83	2.81	2.55	1.98	1.86
9	1.50	2.14	3.70	3.51	2.90	3.31	6.23	3.65	2.86	5.02	1.84	1.84
10	1.46	2.06	3.58	3.44	2.64	3.50	5.47	3.95	2.77	4.40	1.84	2.34
11	1.59	1.93	3.47	5.11	2.96	3.39	5.05	3.90	2.69	3.76	1.90	2.11
12	1.52	1.91	3.36	7.05	2.82	3.57	4.65	5.38	2.74	3.43	2.74	1.96
13	1.52	1.89	3.27	5.53	2.47	3.24	4.45	6.25	2.85	3.51	2.85	1.86
14	1.55	1.83	3.22	4.93	2.50	3.17	4.21	5.65	2.90	3.33	2.64	1.79
15	1.61	1.86	3.14	4.35	2.36	3.84	3.97	5.66	2.73	2.96	2.38	1.71
16	1.51	1.81	3.06	4.10	2.21	2.78	3.79	5.18	2.57	2.83	2.14	1.74
17	1.45	1.76	2.94	7.87	1.99	2.72	3.63	4.74	2.42	2.74	2.00	1.78
18	1.49	1.77	2.82	6.50	2.14	2.80	3.78	4.42	2.38	2.64	2.48	1.72
19	1.50	1.79	2.72	5.45	2.24	2.90	4.41	4.65	2.42	2.53	2.26	1.72
20	1.53	1.76	2.63	4.97	2.21	2.76	4.26	4.34	2.38	2.47	2.11	1.62
21	1.53	1.74	2.54	4.36	2.37	2.80	4.19	4.28	2.46	2.41	2.16	1.66
22	1.60	1.74	2.87	3.73	2.43	2.74	4.03	4.14	2.48	2.33	2.06	1.80
23	1.97	1.75	4.66	4.29	2.29	2.91	4.23	3.89	2.40	2.88	1.92	1.91
24	4.11	2.00	5.21	4.12	2.11	3.08	4.03	3.77	2.30	2.54	1.90	1.86
25	4.33	2.09	4.66	4.63	2.17	3.21	3.87	3.93	2.54	2.35	1.90	1.79
26	3.58	2.07	4.24	4.33	2.21	3.45	3.55	3.85	3.25	2.23	2.04	1.74
27	3.18	2.02	3.88	3.30	2.26	3.45	3.60	3.75	3.20	2.17	1.90	1.66
28	2.86	1.99	3.87	3.25	2.38	3.37	3.49	3.63	3.18	2.19	1.92	1.64
29	2.68	1.95	3.79	3.58	2.39	3.73	3.41	3.56	3.70	2.14	1.87	2.04
30	2.52	2.48	3.59	3.48	-------	4.37	3.35	3.67	3.52	2.05	1.76	10.07
31	2.66	-------	3.60	3.37	-------	4.80	-------	3.49	-------	2.09	1.74	-------

Note.—Gage height Jan. 7 not observed.

Daily discharge, in second-feet, of Lehigh River at Bethlehem, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	510	1,120	5,970	2,580	2,240	1,020	4,580	2,410	2,240	2,080	735	480
2	455	1,020	4,140	2,410	2,410	1,120	3,520	2,240	2,080	1,930	690	510
3	455	920	3,130	2,760	1,930	1,240	3,320	2,080	1,930	1,790	650	540
4	430	780	2,410	3,930	1,790	1,120	3,320	1,930	1,790	1,660	650	575
5	390	650	2,580	3,520	2,410	1,660	4,360	1,720	1,660	1,470	735	510
6	390	610	3,130	2,410	3,930	3,720	8,550	1,410	1,530	1,350	650	540
7	410	650	4,360	2,660	1,930	4,140	20,600	1,410	1,660	1,290	575	670
8	410	650	3,720	2,760	1,660	2,760	13,600	1,600	1,530	1,240	690	575
9	390	825	2,940	2,580	1,660	2,240	8,830	2,760	1,600	5,730	575	575
10	375	735	2,760	2,410	1,350	2,580	6,950	3,520	1,470	4,360	575	1,020
11	430	650	2,580	5,970	1,720	2,410	5,730	3,320	1,410	3,130	610	780
12	390	610	2,410	11,100	1,530	2,760	4,810	6,700	1,470	2,410	1,470	650
13	390	610	2,240	6,950	1,120	2,080	4,360	8,830	1,600	2,580	1,600	575
14	410	575	2,080	5,500	1,180	2,080	3,930	7,210	1,660	2,240	1,350	510
15	430	575	1,930	4,360	1,020	3,130	3,520	7,470	1,470	1,720	1,070	480
16	390	540	1,930	3,720	870	1,530	3,130	6,210	1,240	1,600	825	510
17	375	510	1,720	13,600	690	1,410	2,760	5,040	1,070	1,470	690	540
18	390	510	1,530	9,670	825	1,530	3,130	4,360	1,070	1,350	1,180	480
19	390	540	1,410	6,700	920	1,660	4,360	4,810	1,070	1,240	920	480
20	410	510	1,350	5,730	870	1,470	4,140	4,140	1,070	1,120	780	480
21	410	510	1,240	4,360	1,020	1,530	3,930	4,140	1,120	1,070	825	455
22	430	510	1,660	2,940	1,120	1,470	3,520	3,720	1,180	1,020	735	540
23	650	510	5,040	4,140	970	1,660	3,930	3,320	1,070	1,660	610	610
24	3,720	690	6,210	3,720	780	1,930	3,520	3,130	970	1,240	610	575
25	4,140	780	5,040	4,810	825	2,080	3,320	3,320	1,240	1,060	610	540
26	2,760	735	3,930	4,140	870	2,410	2,760	3,130	2,080	920	735	510
27	2,080	690	3,320	2,240	920	2,410	2,760	3,130	2,080	825	610	455
28	1,660	690	3,320	2,080	1,070	2,410	2,580	2,760	2,080	870	610	455
29	1,410	650	3,130	2,760	1,070	2,940	2,410	2,760	2,940	825	575	735
30	1,180	1,180	2,760	2,580	-------	4,360	2,410	2,940	2,580	735	510	20,000
31	1,350	-------	2,760	2,410	-------	5,270	-------	2,580	-------	780	510	-------

Note.—Discharge does not include the water diverted past the gage through the Lehigh Coal and Navigation Company canal. Canal was closed Dec. 8 to Mar. 16. Discharge Jan. 7 estimated by interpolation, because of no gage height record.

Monthly discharge of Lehigh River at Bethlehem, for the year ending Sept. 30, 1924.

(Drainage area 1,240 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	4,140	375	902	0.727	0.84
November	1,180	510	684	.552	.62
December	6,210	1,240	2,990	2.41	2.78
January	13,600	2,080	4,430	3.57	4.12
February	3,930	690	1,400	1.13	1.22
March	5,270	1,020	2,260	1.82	2.10
April	20,600	2,410	4,950	3.99	4.45
May	8,830	1,410	3,680	2.97	3.42
June	2,940	970	1,590	1.28	1.43
July	5,730	735	1,760	1.37	1.58
August	1,600	510	773	.623	.72
September	20,000	430	1,210	.976	1.09
The Year	20,600	375	2,220	1.79	24.37

Note.—Discharge and run-off does not include the water diverted past the gage through the Lehigh Coal and Navigation Company Canal. Canal was closed Dec. 8, to Mar. 16.

DELAWARE RIVER AT RIEGELSVILLE

Location.—At three-span suspension highway bridge between Riegelsville, Bucks County, Pa., and Riegelsville, Warren County, N. J., about 900 feet upstream from mouth of Musconetcong River.

Drainage Area.—6,190 square miles.

Gages.—Automatic water-stage recorder installed February 28, 1924, on left bank (New Jersey side) 20 feet upstream from the bridge; inclined staff and chain gages used prior to installation of water-stage recorder. Recorder inspected by J. H. Brotzman.

Discharge Measurements.—Made from downstream side of bridge.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of gravel and boulders. Control it at a well defined riffle about one-half mile downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, from water-stage recorder, 23.1 feet at 4 a. m. April 8 (discharge, 128,000 second-feet); minimum stage recorded 2.05 feet several times in October (discharge, 1,360 second-feet).

1906-1924; Maximum stage recorded, 25 feet March 28, 1913 (discharge, 144,000 second-feet); minimum stage recorded, 1.55 feet at 8.00 a. m. September 20, 1908 (discharge, 870 second-feet).

The flood of October 10-11, 1903, reached a stage of 35.9 feet determined by levels from three good flood marks. Maximum discharge during this flood has been estimated 275,000 second-feet at Riegelsville from observations made at Lambertville.

Ice.—Stage-discharge relation not seriously affected by ice.

Diversions.—The Delaware Division of the Pennsylvania Canal diverted about 230 second-feet from the Lehigh River near its mouth from October 1 to December 8 and March 7 to September 30.

Accuracy.—Stage-discharge relation permanent. Rating curve well defined. Gage read to half tenths twice daily previous to March 1, when automatic record began. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

Cooperation.—Record furnished by United States Geological Survey Office, Trenton, N. J.

The following discharge measurement was made by H. C. Barksdale: No. 38, August 15: Gage height, 2.89 feet; discharge 3,170 second-feet.

Daily Mean Gage Height, in feet, of Delaware River at Riegelsville, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.85	3.80	6.85	5.35	5.10	3.51	9.20	6.10	5.52	3.90	2.45	2.48
2	2.85	3.80	10.76	5.30	4.95	3.61	8.26	6.20	5.21	3.86	2.41	2.39
3	2.70	3.75	8.63	5.38	4.90	3.68	7.38	6.40	4.97	3.74	2.35	2.28
4	2.58	3.60	7.20	6.40	4.78	3.77	7.10	6.20	4.83	3.60	2.37	2.23
5	2.50	3.45	6.40	6.40	4.70	4.58	7.72	5.90	4.70	3.48	2.40	2.25
6	2.38	3.38	6.80	-------	6.05	5.52	8.96	6.50	4.51	3.36	2.41	2.32
7	2.30	3.30	8.78	-------	5.15	6.12	18.07	6.10	4.56	3.26	2.42	2.40
8	2.30	3.30	8.98	-------	4.55	5.80	21.60	5.73	4.47	3.60	2.42	2.42
9	2.30	3.60	7.65	-------	4.35	5.58	16.10	6.34	4.91	4.97	2.29	2.45
10	2.25	3.85	6.95	5.00	4.10	6.00	12.72	7.21	4.73	5.17	2.24	2.79
11	2.20	3.65	6.65	5.65	3.90	5.10	11.70	7.22	4.46	5.00	2.35	2.83
12	2.20	3.55	6.35	14.34	4.00	5.60	10.50	8.54	4.30	4.34	2.76	3.43
13	2.18	3.40	6.30	13.50	3.80	5.15	9.45	11.75	4.30	4.12	3.30	3.36
14	2.10	3.32	5.90	10.56	3.60	4.80	8.75	12.30	4.30	3.92	2.95	3.02
15	2.15	3.30	5.70	8.73	3.70	4.60	8.51	11.70	4.30	3.77	2.88	2.86
16	2.20	3.20	5.60	7.90	3.50	4.40	8.48	12.20	4.30	3.83	2.67	2.70
17	2.08	3.18	-------	11.85	3.60	4.10	7.88	10.80	-------	3.65	2.56	2.61
18	2.05	3.10	-------	12.25	3.50	4.15	7.55	9.55	-------	3.43	2.70	2.57
19	2.10	3.05	-------	10.36	3.40	4.15	9.25	9.02	-------	3.23	2.66	2.45
20	2.18	3.00	-------	9.27	-------	4.20	10.88	8.67	-------	3.10	2.50	2.41
21	2.10	2.95	4.32	8.38	-------	4.25	10.05	8.13	3.72	3.06	2.50	2.30
22	2.18	2.95	4.58	-------	-------	4.42	8.28	7.76	3.52	3.00	2.50	2.35
23	2.22	2.92	5.65	-------	-------	4.55	9.51	7.23	3.44	3.13	2.50	2.46
24	3.30	3.10	7.10	-------	-------	5.23	9.64	6.76	3.51	3.07	2.50	2.47
25	5.40	3.30	7.45	6.30	-------	6.60	8.62	6.94	3.60	2.83	2.45	2.45
26	6.30	3.55	6.80	6.60	-------	7.00	7.87	6.57	4.18	2.76	2.44	2.50
27	5.60	3.55	6.15	-------	-------	6.78	7.30	6.20	3.68	2.65	2.45	2.50
28	4.90	3.55	5.90	4.60	3.45	6.40	6.70	6.00	3.92	2.62	2.75	2.50
29	4.22	3.40	6.00	4.95	3.45	6.48	6.50	5.83	4.10	2.61	2.93	2.45
30	3.95	3.72	5.60	5.05	-------	7.60	6.20	6.03	4.10	2.59	2.81	9.28
31	3.90	-------	5.40	5.10	-------	9.00	-------	5.92	-------	2.58	2.60	-------

Note.—Gage height not observed on days of no record.

Daily discharge, in second-feet of Delaware River at Riegelsville, for the year ending Sept 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,960	5,610	16,200	10,900	9,840	4,710	27,400	13,500	11,200	5,920	2,060	2,160
2	2,960	5,610	35,500	10,500	9,500	5,010	23,000	13,900	10,200	5,920	1,960	1,900
3	2,600	5,610	24,500	10,900	9,160	5,310	18,800	14,600	9,500	5,310	1,800	1,770
4	2,370	5,010	18,000	14,000	8,820	5,610	17,500	13,900	8,820	5,010	1,860	1,680
5	2,160	4,420	14,600	14,000	8,480	8,150	20,200	12,700	8,480	4,710	1,960	1,680
6	1,960	4,420	16,200		13,100	11,200	26,200	15,000	7,820	4,410	1,930	1,770
7	1,770	4,140	25,400	9,700	10,200	12,500	82,000	13,500	8,150	4,140	1,960	1,960
8	1,770	4,140	26,400		8,150	12,400	109,000	12,000	7,820	5,010	1,960	1,960
9	1,770	5,010	19,700		7,490	11,600	67,900	14,200	9,160	9,500	1,770	2,000
10	1,680	5,610	17,100	9,500	6,540	13,100	46,200	18,000	8,480	10,200	1,680	2,840
11	1,590	5,010	15,400	11,600	5,920	9,800	40,400	18,000	7,820	9,500	1,800	2,960
12	1,590	5,010	14,600	55,900	6,230	11,600	34,000	24,200	7,170	7,170	2,720	4,420
13	1,590	4,420	14,200	51,000	5,610	10,200	28,400	41,000	7,170	7,170	2,720	4,420
14	1,430	4,140	12,700	34,500	5,010	8,820	25,400	43,000	7,170	5,920	3,200	3,330
15	1,510	4,140	12,000	24,900	5,310	8,150	24,000	40,400	7,170	5,600	3,080	2,900
16	1,590	3,860	11,600	21,100	4,710	7,490	24,000	43,300	7,170	5,610	2,480	2,600
17	1,430	3,860		41,000	5,010	6,540	21,100	35,500		5,010	2,260	2,300
18	1,360	3,590	8,600	43,300	4,710	6,850	19,700	29,300	6,000	4,420	2,600	2,260
19	1,430	3,330		33,400	4,420	6,850	27,400	26,400		3,800	2,480	2,000
20	1,590	3,330		27,900		6,850	36,100	24,900		3,590	2,160	1,960
21	1,430	3,200	7,170	23,500		6,850	31,300	22,100	5,310	3,590	2,160	1,770
22	1,590	3,200	8,150			7,490	27,900	20,700	4,710	3,330	2,160	1,860
23	1,590	3,080	11,600	14,200	6,100	8,150	28,800	18,000	4,420	3,500	2,160	2,060
24	4,140	3,590	17,500			10,200	29,300	16,300	4,710	3,590	2,160	2,060
25	10,900	4,140	18,800	14,200		15,400	24,500	16,700	5,010	2,960	2,060	2,060
26	14,200	5,010	16,300	15,400		17,100	21,100	15,400	6,850	2,720	2,060	2,160
27	11,600	5,010	13,900	11,000		16,300	18,400	13,900	5,310	2,480	2,000	2,160
28	9,160	5,010	12,700	8,150	4,420	14,600	15,800	13,100	5,920	2,370	2,720	1,960
29	6,850	4,420	13,100	9,500	4,420	15,000	15,000	12,400	6,540	2,370	3,200	2,060
30	6,230	5,310	11,600	9,500	-------	19,700	13,900	13,100	6,540	2,370	2,840	27,800
31	5,920	-------	10,900	9,840	-------	26,400	-------	12,700	-------	2,370	2,370	-------

Note.—Discharge does not include water diverted past the gage through the Delaware Division of the Pennsylvania Canal. Canal was closed Dec. 9 to Mar. 6. Discharge estimated Dec. 17-20, Jan. 6-9, 22-24, 27, Feb. 20-27, and June 17-20, by comparison with graphs of discharge for Trenton and Belvidere, N. J. Braced figures show mean discharge for the periods included.

Monthly discharge of Delaware River at Riegelsville, for the year ending Sept. 30, 1924.

(Drainage area 6,190 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	14,200	1,360	3,570	0.614	0.71
November	5,610	3,080	4,410	.750	.84
December	35,500	7,170	15,200	2.46	2.84
January	55,900	8,150	19,300	3.12	3.60
February	13,100	4,420	6,750	1.09	1.18
March	26,400	4,710	10,700	1.76	2.03
April	109,000	13,900	31,500	5.12	5.71
May	43,800	12,000	20,700	3.39	3.91
June	11,200	4,420	7,090	1.18	1.32
July	10,200	2,370	4,810	.814	.94
August	4,140	1,680	2,320	.412	.48
September	27,800	1,680	3,170	.549	.61
The Year	109,000	1,360	10,800	1.78	24.17

Note.—Discharge does not include the water diverted past the gage through the Delaware Division of the Pennsylvania Canal. Canal was closed Dec. 9 to Mar. 6. Run-off includes 230 second-feet, estimated flow in canal, Oct. 1 to Dec. 8 and Mar. 7 to Sept. 30.

DELAWARE BASIN—STATION NO. 12

DELAWARE RIVER AT TRENTON, N. J.

Location.—On Calhoun Street Bridge, Trenton, Mercer County, one mile upstream from Pennsylvania Railroad bridge and half a mile upstream from mouth of Assanpink Creek.

Drainage Area.—6,800 square miles.

Records Available.—February 24, 1913, to September 30, 1924.

Gage.—Chain gage attached to downstream side of bridge about 100 feet from left abutment; read by United States Weather Bureau.

Discharge Measurements.—Made from upstream side of bridge.

Channel and Control.—Rocky and permanent at the rapids a few hundred feet downstream from the bridge.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 11.8 feet at 9.30 a. m. April 8 (discharge, 132,000 second-feet); minimum stage recorded —0.20 foot October 17 to 19 (discharge, 1,560 second-feet).

1913-1924; Maximum stage recorded, 13.3 during night of March 28-29, 1913 (discharge, 160,000 second-feet); minimum stage recorded —0.40 foot several times in October and November 1914 (discharge, 1,240 second-feet).

Ice.—Stage-discharge relation affected by ice.

Diversions.—The Delaware division of the Pennsylvania canal diverts about 53 second-feet by the gaging station from about March 31 to December 15 each year. The Delaware and Raritan canal feeder diverts about 160 second-feet from the first of March to the last of December each year. The Trenton Power canal diverts about 210 second-feet, around the gage, daily.

Accuracy.—Stage-discharge relation considered permanent, except during ice affected periods. Rating curve well defined between 1,700 and 90,000 second-feet. Gage read to hundredths once a day. Daily discharge ascertained by applying daily gage height to rating table. Records good.

Cooperation.—Record furnished by United States Geological Survey Office, Trenton, N. J.

Discharge Measurements of Canals which divert water around gaging station on Delaware River at Trenton, N. J., during the year ending September 30, 1924.

Date	Pennsylvania Canal	Power Canal Trenton	Delaware and Raritan Feeder
	Sec. Ft.	Sec. Ft.	Sec. Ft.
June 25	69	284	171
August 14	59	169	123
September 13		162	143
September 15	69		

Daily Mean Gage Height, in feet, of Delaware River at Trenton, N. J., for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.35	1.30	2.30	2.50	5.50	0.94	4.28	3.00	2.40	1.38	0.20	0.26
2	.45	1.20	4.92	2.30	5.40	1.00	3.98	2.63	2.12	1.26	.18	.12
3	.40	1.20	4.28	2.80	3.00	1.10	3.30	2.72	2.00	1.20	.10	.15
4	.28	1.02	3.45	3.18	1.98	1.02	3.18	2.67	1.88	1.12	.02	.00
5	.20	.90	2.97	2.80	1.70	2.00	3.50	2.40	1.87	.98	.04	—.10
6	.10	.85	3.25	3.10	3.20	2.43	4.15	2.70	1.68	.92	.10	—.05
7	.12	.80	3.62	2.12	2.30	3.28	3.30	2.68	1.72	.80	.10	.05
8	.00	.82	4.25	4.20	1.80	2.60	11.20	2.42	1.68	.74	.12	.10
9	.00	.80	3.90	2.30	1.52	2.30	8.45	2.90	1.54	1.49	.10	.10
10	.00	1.10	3.22	2.14	1.66	2.44	6.35	3.24	1.92	2.09	.05	.14
11	.00	1.24	3.00	1.80	1.64	2.30	5.52	3.15	1.70	2.21	—.05	.33
12	—.05	1.00	2.82	5.80	1.22	2.85	4.93	4.10	1.55	1.80	.30	.38
13	—.05	.90	2.79	7.00	1.30	2.50	4.40	5.02	1.50	1.47	.70	1.06
14	—.10	.80	2.60	5.32	1.12	2.10	4.05	5.98	1.62	1.50	.80	1.00
15	—.10	.80	2.44	4.37	1.00	1.88	3.80	5.52	1.60	1.10	.50	.50
16	—.10	.73	2.33	3.40	1.24	1.68	3.82	5.75	1.44	1.20	.40	.40
17	—.20	.70	2.18	4.72	1.10	1.50	3.68	5.43	1.25	1.14	.17	.30
18	—.20	.66	2.00	6.18	.98	1.42	3.52	4.65	1.18	.92	.17	.22
19	—.20	.55	1.83	5.32	1.17	1.52	4.25	4.18	1.21	.85	.32	.20
20	—.15	.58	1.70	4.44	1.22	1.51	5.13	4.00	1.16	.71	.26	.10
21	—.13	.52	1.62	3.86	2.08	1.48	4.98	3.80	1.28	.57	.20	.03
22	—.10	.50	1.57	3.20	3.30	1.60	4.40	3.60	1.11	.60	.08	.00
23	—.13	.45	2.62	4.00	1.92	1.64	4.23	3.34	.91	.55	.16	.12
24	.32	.65	3.19	5.78	1.52	1.70	4.59	3.00	.89	.60	.20	.15
25	2.00	.60	3.40	3.52	1.22	2.35	4.10	2.97	.95	.54	.18	.20
26	2.25	.82	3.20	3.40	.96	3.05	3.63	2.95	1.40	.45	.32	.10
27	2.65	1.03	2.80	6.95	.90	3.12	3.30	2.70	1.28	.34	.16	.14
28	2.10	.96	2.68	6.82	.88	2.98	3.00	2.58	1.15	.28	.15	.11
29	1.70	.84	2.70	6.79	.86	2.79	2.80	2.52	1.35	.30	.40	.10
30	1.50	.80	2.51	6.90	-------	4.55	2.70	2.43	1.62	.28	.48	.34
31	1.40	-------	2.20	5.57	-------	4.08	-------	2.60	-------	.28	.35	-------

Note.—Stage-discharge relation Jan. 6, 8-11 and Jan. 23 to Feb. 3 affected by ice.

Daily discharge, in second-feet, of Delaware River at Trenton, N. J., for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,700	6,000	11,100	12,500		4,490	27,400	16,400	11,800	6,400	2,300	2,430
2	3,000	5,600	33,400	11,100	10,000	4,850	24,700	13,200	9,800	6,000	2,300	2,080
3	2,840	5,600	27,400	14,800		5,220	18,800	14,000	9,200	5,600	2,080	2,130
4	2,560	4,850	19,600	18,000	9,200	4,850	18,000	14,000	8,650	5,220	1,900	1,900
5	2,300	4,490	16,400	14,800	7,650	9,700	20,400	11,800	8,650	4,850	1,990	1,720
6	2,080	4,140	18,000	13,000	18,000	11,800	26,500	14,000	7,650	4,490	2,080	1,810
7	2,080	4,140	21,200	9,800	11,100	18,800	76,200	14,000	7,650	4,140	2,080	1,900
8	1,900	4,140	26,500		8,150	13,200	121,000	11,800	7,650	3,800	2,080	2,080
9	1,900	4,140	23,800	9,900	6,800	11,100	77,600	15,600	6,800	6,800	2,080	2,000
10	1,900	5,220	18,000		7,650	11,800	50,600	18,000	8,650	9,800	1,990	2,190
11	1,900	5,600	16,400		7,200	11,100	39,800	18,000	7,650	10,400	1,810	2,700
12	1,810	4,850	14,800	43,300	5,600	14,800	33,400	25,600	7,200	8,150	2,590	2,840
13	1,810	4,490	14,800	58,400	6,000	12,500	28,400	34,400	6,800	6,800	3,800	5,220
14	1,720	4,140	13,200	37,600	5,220	9,800	24,700	45,700	7,200	6,800	4,140	4,850
15	1,720	4,140	11,800	28,400	4,850	8,650	22,900	39,800	7,200	5,220	3,150	3,150
16	1,720	3,800	11,100	19,600	5,600	7,650	22,900	43,200	6,400	5,600	2,840	2,810
17	1,560	3,800	10,400	31,400	5,220	6,800	22,000	38,700	5,600	5,220	2,190	2,500
18	1,560	3,800	9,200	48,100	4,850	6,400	18,800	30,400	5,600	4,490	2,190	2,300
19	1,560	3,470	8,150	37,600	5,600	6,800	26,500	26,500	5,600	4,140	2,560	2,300
20	1,640	3,470	7,650	28,400	5,600	6,800	35,400	24,700	5,600	3,800	2,490	2,080
21	1,640	3,150	7,200	23,800	9,800	6,800	34,400	22,900	6,000	3,470	2,300	1,990
22	1,720	3,150	7,200	18,000	18,800	7,200	28,400	21,200	5,220	3,470	2,080	1,900
23	1,640	3,000	13,200		8,650	7,200	26,500	18,800	4,490	3,470	2,190	2,000
24	2,560	3,470	18,000		6,800	7,650	30,400	16,400	4,490	3,470	2,300	2,190
25	9,200	3,470	19,600		5,600	11,800	25,600	16,400	4,850	3,150	2,300	2,300
26	10,400	4,140	18,000		4,850	16,400	21,200	16,400	6,400	3,000	2,560	2,080
27	13,200	4,850	14,800	13,300	4,490	17,200	18,800	14,000	6,000	2,700	2,190	2,190
28	9,800	4,850	14,000		4,490	16,400	16,400	13,200	5,600	2,560	2,190	2,080
29	7,650	4,140	14,000		4,490	14,800	14,800	12,500	6,400	2,560	2,810	2,080
30	6,800	4,140	12,500		-------	30,400	14,000	11,800	7,200	2,560	3,150	2,700
31	6,400	-------	10,400		-------	25,600	-------	13,200	-------	2,560	2,700	-------

Note.—This table indicates flow in river only. Diversion by canals included in monthly table. Stage-discharge relation affected by ice Jan. 6, 8-11 and Jan. 23 to Feb. 3; daily discharge determined by study of hydrograph, of weather records and comparison with records of other stations on Delaware River. Braced figures show mean discharge for the periods included.

Monthly discharge of Delaware River at Trenton, N. J., for the year ending Sept. 30, 1924.
(Drainage area 6,800 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	13,000	1,560	3,590	0.590	0.68
November	6,000	3,000	4,270	.691	.77
December	33,400	7,200	15,500	2.34	2.70
January	58,400	9,800	20,300	3.01	3.47
February	18,800	4,490	7,660	1.16	1.25
March	30,400	4,490	11,200	1.71	1.97
April	121,000	14,000	32,200	4.79	5.34
May	45,700	11,800	20,900	3.13	3.61
June	11,800	4,490	6,930	1.08	1.20
July	10,400	2,560	4,860	.776	.89
August	4,140	1,810	2,430	.419	.48
September	5,220	1,720	2,430	.419	.47
The Year	121,000	1,560	11,000	1.68	22.83

Note.—Discharge does not include the water diverted. Run-off includes diversion of 53 second-feet by the Pennsylvania Canal Oct. 1 to Dec. 8 and Mar. 7 to Sept. 30; 210 second-feet daily by the Trenton Power Canal and 160 second-feet Oct. 1 to Dec. 31 and Mar. 1 to Sept. 30 by the Delaware and Raritan Canal Feeder.

DELAWARE BASIN—STATION NO. 13

LITTLE SCHUYLKILL RIVER AT TAMAQUA

Location.—At three-span stone arch highway bridge, Broad Street, Tamaqua, Schuylkill County, about 500 feet upstream from the mouth of Panther Creek.

Drainage Area.—44 square miles.

Records Available.—June 23, 1916, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by W. P. Griffiths.

Discharge Measurements.—Made from upstream side of bridge; by wading and at Panther Valley Water Company weir about one-half mile upstream from the gage.

Channel and Control.—Both sides of the channel are outlined by retaining walls extending upstream and down stream from the bridge. Banks subject to overflow only during extreme floods. Bed is composed of gravel and rocks. Low-water control is a gravel bar extending diagonally across the channel at downstream side of bridge. Stage-discharge relation not permanent, owing to changes in the gravel bar and lodging of debris and waste on the control.

Extremes of Discharge.—Maximum stage during the year, 7.50 feet observed at 2 p. m. September 30 (discharge, about 5,000 second-feet); minimum, 1.69 feet at 8 a. m. October 9 (discharge, 6.9 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Diversions.—The Panther Valley Water Company pumps water from the stream about one-half mile upstream from the gaging station for mine service, which is returned to the stream through Panther Creek.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined below 25 second-feet and fairly well defined bewteen 25 and 300 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results fair.

Discharge measurements of Little Schuylkill River at Tamaqua, during the year ending Sept. 30, 1924.

No.	Date	Made by	Gage height	Discharge
			Feet	Sec.-ft.
71	Oct. 2a	Panther Valley Water Co.	1.76	8.11
72	5a	do	1.70	7.22
73	9a	do	1.70	6.07
74	16a	do	1.72	6.42
75	19a	do	1.72	6.38
76	24a	do	2.92	183.72
77	30a	do	2.06	36.79
78	Nov. 2a	do	1.99	26.77
79	16a	do	1.92	21.11
80	20a	do	1.89	16.33
81	23a	do	1.92	18.75
82	27a	do	1.93	21.67
83	Dec. 3a	do	2.51	138.71
84	18a	do	2.23	70.97
85	21a	do	2.23	63.18
86	26a	do	2.76	198.84
87	29a	do	2.54	168.73
88	Jan. 1a	do	2.52	152.83
89	7a	do	2.65	161.57
90	8a	do	2.58	131.87
91	30a	do	2.54	152.52
92	Feb. 8a	do	2.34	98.73
93	Mar. 15a	do	2.50	73.62
94	Aug. 20b	H. J. McIntyre,	2.21	41.8
95	20b	do.	2.20	44.3

a Measurement made by weir a short distance upstream from the Panther Valley Water Company's pumping station, about one-half mile upstream from the gage. The amount of pumpage was deducted from the quantity measured at the weir and the gage height at the gaging station used.
b Measurement made by wading 300 feet downstream from the gage.

Daily Mean Gage Height, in feet, of Little Schuylkill River at Tamaqua, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.76	2.04	2.74	2.52	2.46	2.27	2.78	2.53	2.54	2.73	2.27	2.09
2	1.76	1.99	2.60	2.56	2.40	2.28	2.72	2.45	2.53	2.69	2.23	2.11
3	1.72	2.00	2.51	2.70	2.36	2.27	2.72	2.41	2.45	2.62	2.22	2.10
4	1.70	2.02	2.42	2.67	2.35	2.31	2.76	2.38	2.49	2.58	2.23	2.07
5	1.70	1.97	2.51	2.67	2.84	2.56	2.81	2.35	2.45	2.51	2.20	2.16
6	1.71	1.96	3.19	2.66	2.85	2.93	3.35	2.34	2.48	2.49	2.23	2.19
7	1.72	2.02	2.90	2.65	2.47	2.93	3.60	2.34	2.44	2.45	2.21	2.16
8	1.70	2.04	2.85	2.58	2.34	2.60	3.25	2.38	2.45	2.52	2.19	2.11
9	1.70	2.00	2.70	2.50	2.38	2.56	3.08	3.04	2.42	2.71	2.18	2.22
10	1.70	1.97	2.61	2.47	2.42	2.54	2.95	2.99	2.37	2.52	2.20	2.19
11	1.72	1.96	2.62	3.62	2.43	2.54	2.83	3.09	2.35	2.49	2.29	2.21
12	1.70	1.95	2.48	3.33	2.42	2.64	2.75	3.46	2.41	2.45	2.87	2.11
13	1.75	1.91	2.44	3.10	2.42	2.73	2.68	3.32	2.46	2.5[illegible]	2.2[illegible]	2.07
14	1.76	1.91	2.45	2.94	2.40	2.63	2.63	3.10	2.44	2.48	2.31	2.06
15	1.77	1.91	2.34	2.79	2.41	2.50	2.59	3.00	2.38	2.45	2.24	2.07
16	1.72	1.92	2.30	3.16	2.54	2.48	2.54	2.92	2.35	2.43	2.19	2.02
17	1.70	1.97	2.27	3.60	2.51	2.51	2.54	2.84	2.34	2.39	2.28	1.98
18	1.70	1.94	2.23	3.32	2.35	2.65	2.76	2.80	2.61	2.37	2.26	1.97
19	1.76	1.89	2.21	3.12	2.16	2.58	2.77	2.75	2.58	2.33	2.19	1.96
20	1.80	1.89	2.20	2.96	2.12	2.53	2.67	2.68	2.55	2.32	2.22	1.94
21	1.76	1.91	2.23	2.83	2.77	2.47	2.62	2.70	2.45	2.30	2.20	1.94
22	1.73	1.88	2.63	3.04	2.79	2.47	2.58	2.64	2.37	2.30	2.19	1.96
23	1.83	1.92	3.05	2.85	2.66	2.50	2.56	2.55	2.40	2.56	2.16	2.15
24	2.92	2.04	2.97	2.65	2.64	2.52	2.54	2.72	2.40	2.40	2.24	2.01
25	2.54	1.98	2.88	2.73	2.61	2.53	2.53	2.77	2.67	2.31	2.21	1.98
26	2.19	1.94	2.76	2.74	2.48	2.58	2.52	2.64	2.60	2.29	2.17	1.98
27	2.12	1.93	2.68	2.75	2.38	2.56	2.52	2.69	2.71	2.28	2.15	1.96
28	2.09	1.90	2.55	2.74	2.36	2.70	2.50	2.65	2.67	2.29	2.14	1.99
29	2.08	1.91	2.54	2.74	2.28	2.76	2.50	2.65	2.94	2.28	2.11	2.78
30	2.06	2.77	2.56	2.58	-------	2.76	2.59	2.61	2.78	2.28	2.09	6.78
31	2.05	-------	2.56	2.47	-------	2.77	-------	2.55	-------	2.28	2.08	-------

Note.—Stage-discharge relation Jan. 5-9, Jan. 26 to Feb. 4 and Feb. 9 to Mar. 3 affected by ice.

Daily discharge, in second-feet, of Little Schuylkill River at Tamaqua, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.9	34	240	145	55	42	213	118	121	191	54	29
2	8.9	27	180	162	55	55	187	94	118	174	47	31
3	7.6	28	145	220	55	65	187	84	94	148	45	30
4	7.1	31	121	200	70	88	204	77	105	134	47	27
5	7.1	24	145	180	280	162	227	70	94	111	42	37
6	7.3	23	460	140	280	325	548	68	103	105	47	41
7	7.6	31	300	120	136	289	720	68	92	94	44	37
8	7.1	34	280	110	97	140	482	77	94	114	41	31
9	7.1	28	220	110	70	127	300	359	86	182	40	45
10	7.1	24	180	136	55	124	300	322	74	114	42	41
11	7.6	23	180	720	50	124	237	390	70	105	57	44
12	7.1	22	139	550	42	155	200	615	84	94	257	31
13	8.6	18	127	400	42	191	170	515	97	111	57	27
14	8.9	18	130	325	40	151	151	390	92	103	61	26
15	9.4	18	97	260	40	108	137	328	77	94	49	27
16	7.6	18	85	430	40	103	121	283	70	89	41	22
17	7.1	24	78	720	38	111	121	242	68	79	56	19
18	7.1	20	68	520	36	159	204	222	114	74	52	18
19	8.9	16	62	400	36	134	209	200	134	66	41	17
20	11	16	60	325	36	118	167	170	124	63	45	16
21	8.9	18	68	280	36	100	148	178	94	59	42	16
22	7.9	15	200	375	36	100	134	155	74	59	41	17
23	12	18	375	280	36	108	127	124	81	127	37	36
24	300	31	325	200	36	114	121	187	81	81	49	21
25	162	25	300	240	36	118	118	209	167	61	44	19
26	58	20	240	220	36	134	114	155	140	57	38	19
27	45	19	220	140	38	127	114	174	182	56	36	17
28	41	17	240	110	40	178	108	159	167	57	35	19
29	40	18	162	85	40	204	108	159	294	56	31	213
30	37	240	162	70	-------	204	137	144	213	56	29	3,600
31	35	-------	162	60	-------	209	-------	124	-------	56	28	-------

Note.—Discharge does not include the quantity of water diverted by the Panther Valley Water Company. Discharge Jan. 5-9, Jan. 26 to Feb. 4 and Feb. 9 to Mar. 3 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Schuylkill River at Reading and Nescopeck Creek near St. Johns.

Monthly discharge of Little Schuylkill River at Tamaqua, for the year ending Sept. 30, 1924.
(Drainage area 44 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	300	7.1	29.2	0.718	0.83
November	240	15	30.0	.736	.82
December	460	60	186	4.27	4.92
January	720	60	266	6.09	7.02
February	280	36	65	1.53	1.65
March	325	42	141	3.25	3.75
April	720	108	213	4.89	5.46
May	615	68	208	4.73	5.45
June	294	63	114	2.59	2.89
July	191	56	95.8	2.18	2.51
August	257	28	50.8	1.15	1.33
September	3,600	16	152	3.45	3.85
The Year	3,600	7.1	130	2.98	40.48

Note.—Discharge does not include the quantity of water diverted by the Panther Valley Water Company. Run-off does include the quantity of water diverted.

DELAWARE BASIN—STATION NO. 14

SCHUYLKILL RIVER AT READING

Location.—At concrete viaduct, Penn Street, Reading, Berks County.

Drainage Area.—900 square miles.

Records Available.—May 6, 1914, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by H. J. Kline. Elevation of gage zero 188.50 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Right bank is high and not subject to overflow; left is low and stream begins to overflow the canal tow-path at a stage of 6.8 feet. Bed is composed of gravel. Low-water control is at a slight riffle about 700 feet downstream from the gage; may shift occasionally. Control for high stages is probably at the Pennsylvania Railroad bridge about 900 feet downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 16.2 feet at midnight September 30—October 1, 1924, when the stream was rising (discharge, about 38,000 second-feet); a crest stage of 9.4 feet, estimated from hydrograph, was reached at 2 a. m. April 7 (discharge, about 19,000 second-feet); minimum, —0.70 foot at 4.45 p. m. October 14 and 8 a. m. October 23 (discharge, 170 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Diversions.—During navigation season water is diverted past the gage through the Schuylkill Navigation Company Canal, which follows along the left bank.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve farily well defined below 15,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for low stages, when they are fair, owing to uncertain quantity of water diverted by the canal.

Discharge measurements of Schuylkill River at Reading, during the year ending Sept. 30, 1924.

No.	Date	Made by	Gage height	Discharge
			Feet	Sec.-ft.
56	Aug. 19	J. M. Snavely	0.85	776
57	19	H. J. McIntyre	.79	795
58	Sept. 16	do	—0.13	358
59	16	do.	—0.13	375

Daily Mean Gage Height, in feet, of Schuylkill at Reading, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	—0.26	0.54	4.93	2.75	1.50	0.84	2.61	2.02	1.91	4.18	0.70	0.02
2	— .28	.32	3.35	2.38	1.31	1.17	2.07	1.72	1.92	3.54	.38	.01
3	— .45	.28	2.58	3.11	1.22	1.48	2.50	1.51	1.69	3.05	.38	.07
4	— .50	.22	1.99	3.58	1.23	1.68	3.10	1.40	1.76	2.86	.45	.02
5	— .48	.18	2.39	3.08	2.17	3.63	3.58	1.34	1.65	2.40	.40	.05
6	— .64	.19	3.58	2.20	3.85	5.14	4.93	1.20	1.50	2.20	.32	.28
7	— .62	.18	4.40	2.18	2.15	4.65	7.98	1.15	2.05	1.98	.24	.12
8	— .50	.35	3.48	2.10	1.65	3.98	5.77	1.18	1.52	2.57	.29	.05
9	— .59	.18	2.90	1.76	1.19	2.90	4.85	3.39	1.48	4.68	.31	.12
10	— .59	— .02	2.46	1.66	1.28	3.52	4.22	5.12	1.46	3.12	.26	.50
11	— .52	— .10	2.15	2.65	1.12	4.05	3.52	4.58	1.10	2.50	.09	.28
12	— .52	— .05	1.78	3.82	1.24	4.62	3.12	6.54	1.50	2.12	2.99	.05
13	— .55	— .02	1.52	3.22	1.02	3.86	2.85	6.59	1.87	2.54	2.57	.00
14	— .68	— .13	1.50	2.87	.80	3.02	2.70	5.65	2.98	2.28	1.59	— .10
15	— .54	— .20	1.26	2.42	.98	2.58	2.48	5.70	2.28	1.71	1.06	— .05
16	— .55	— .21	1.10	2.68	.68	2.15	2.16	4.54	2.08	1.50	.78	— .14
17	— .56	— .16	1.02	7.17	.66	1.91	2.15	4.19	1.82	1.38	.69	— .10
18	— .65	— .08	.90	4.89	.69	1.86	2.00	3.65	1.83	1.20	1.32	— .14
19	— .61	— .16	.76	4.14	.40	1.72	3.98	3.92	2.87	1.09	.83	— .19
20	— .42	— .21	.68	3.62	.10	1.68	3.09	3.16	2.90	1.00	.74	— .20
21	— .50	— .28	.82	2.62	.98	1.91	3.12	3.14	3.31	.96	.78	— .20
22	— .55	— .20	1.02	3.35	1.02	2.22	2.92	3.05	2.38	.99	.53	— .14
23	— .65	— .32	4.02	6.30	.74	2.01	2.97	2.54	2.04	4.22	.48	.16
24	3.14	.30	5.25	4.26	.51	2.04	2.52	2.32	1.88	1.96	.50	.08
25	3.78	.10	4.65	4.29	.49	1.98	2.42	2.75	2.07	1.44	.44	.02
26	2.17	.01	3.40	2.92	.54	2.10	2.22	2.42	3.48	1.18	.48	— .20
27	1.51	— .05	2.78	1.48	.56	2.35	2.04	2.21	3.16	1.04	.40	— .20
28	1.08	— .08	2.78	1.73	.65	2.42	1.94	2.5_	3.78	1.02	.34	— .30
29	.92	— .18	2.76	1.75	.72	2.72	1.10	2.32	5.48	-------	.3_	.42
30	.75	1.52	2.35	1.75	-------	3.02	2.05	2.50	5.06	.62	.10	10.40
31	.95	-------	2.62	1.72	-------	2.82	-------	2.16	-------	.78	.02	-------

Note.—Stage-discharge relation Jan. 22-24, Jan. 28 to Feb. 1, Feb. 10, 15, 17-19 and 21-29 affected by ice. Gage height July 29 not observed.

Daily discharge, in second-feet, of Schuylkill River at Reading, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	330	720	7,890	3,400	1,800	930	3,020	2,100	1,970	6,320	860	440
2	310	600	4,620	2,700	1,330	1,240	2,250	1,720	1,970	4,830	660	440
3	250	600	3,020	4,000	1,240	1,510	2,860	1,510	1,720	5,040	660	465
4	230	540	2,100	5,040	1,240	1,720	4,000	1,420	1,840	3,600	690	440
5	230	540	2,700	4,000	2,400	5,040	5,040	1,330	1,610	2,700	660	465
6	188	540	5,040	2,400	5,460	8,350	7,890	1,240	1,510	2,400	600	600
7	194	540	6,760	2,400	2,400	7,200	15,400	1,240	2,100	2,100	570	490
8	230	630	4,830	2,250	1,610	5,880	10,000	1,240	1,510	3,020	600	465
9	203	540	3,600	1,840	1,240	3,600	7,660	4,620	1,510	7,430	600	490
10	203	440	2,860	1,720	1,000	4,830	6,320	8,350	1,510	4,000	570	720
11	224	390	2,400	3,020	1,160	5,880	4,830	7,200	1,160	2,860	490	600
12	224	415	1,840	5,460	1,240	7,200	4,000	11,700	1,510	2,256	3,800	465
13	215	440	1,510	4,200	1,080	5,670	3,400	11,900	1,970	2,860	3,020	440
14	176	370	1,510	3,600	930	3,800	3,200	9,540	3,800	2,550	1,510	390
15	218	350	1,330	2,700	850	3,020	2,860	9,780	2,550	1,720	1,160	415
16	215	350	1,160	3,200	860	2,400	2,400	6,980	2,250	1,510	930	370
17	212	370	1,080	13,400	600	1,970	2,400	6,320	1,810	1,420	800	390
18	185	390	1,000	7,890	550	1,970	3,020	5,040	1,840	1,240	1,330	370
19	197	370	930	6,100	500	1,790	5,880	5,670	3,600	1,160	930	350
20	270	350	860	5,040	490	1,720	4,000	4,200	3,600	1,080	860	350
21	230	310	930	3,020	550	1,970	4,000	4,000	4,410	1,080	930	350
22	215	350	1,080	2,400	800	2,400	3,600	3,800	2,700	1,080	720	370
23	185	350	5,880	2,800	700	2,100	3,800	2,860	2,100	6,320	720	515
24	4,000	600	8,580	5,000	600	2,100	2,860	2,550	1,970	2,100	720	490
25	5,460	490	5,880	6,540	550	2,100	2,700	3,400	2,250	1,420	690	440
26	2,400	440	4,620	3,600	600	2,250	2,400	2,700	4,830	1,240	720	350
27	1,510	415	3,400	1,420	650	2,700	2,100	2,400	4,200	1,080	660	350
28	1,160	390	3,400	1,500	700	2,700	1,970	2,860	5,460	1,080	630	310
29	1,000	350	3,400	1,600	800	3,200	1,160	2,550	9,300	950	540	660
30	930	720	2,700	1,600	-------	3,800	2,100	3,020	8,350	790	490	21,800
31	1,080	-------	3,020	1,400	-------	3,400	-------	2,400	-------	930	440	-------

Note.—Discharge does not include the water diverted past the gage through Schuylkill Navigation Company Canal. Canal was closed Nov. 30 to June 30. Discharge Jan. 22-24, Jan. 28 to Feb. 1, Feb. 10, 15, 17-19 and 21-29 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Little Schuylkill River at Tamaqua, Lehigh River at Tannery and Bethlehem and Swatara Creek at Harpers. Discharge July 29 interpolated.

Monthly discharge of Schuylkill River at Reading, for the year ending Sept. 30, 1924.
(Drainage area 900 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	5,460	176	731	0.812	0.94
November	720	310	463	.514	.57
December	8,580	860	3,220	3.58	4.13
January	13,400	1,400	3,720	4.13	4.76
February	5,460	490	1,150	1.28	1.38
March	8,350	930	3,370	3.74	4.31
April	15,400	1,160	4,240	4.71	5.26
May	11,900	1,240	4,330	4.87	5.62
June	9,300	1,160	2,900	3.22	3.59
July	7,430	790	2,520	2.80	3.23
August	3,800	440	923	1.03	1.19
September	21,800	310	1,160	1.29	1.44
The Year	21,800	176	2,410	2.68	36.42

Note.—Discharge and run-off does not include the water diverted past the gage through the Schuylkill Navigation Company Canal. Canal was closed Nov. 30 to June 30.

DELAWARE BASIN—STATION NO. 15

PERKIOMEN CREEK AT GRATERS FORD

Location.—At two-span steel highway bridge, Graters Ford, Montgomery County.

Drainage Area.—280 square miles.

Records Available.—June 11, 1914, to September 30, 1924.

Gages.—Standard chain attached to upstream side of bridge and inclined staff installed in August, 1921, on left bank 1,760 feet upstream from the chain gage. Both gages are read to hundredths twice daily by C. K. Kulp. Elevation of chain gage zero 109.08 feet, United States Geological Survey datum. The elevation of the staff gage is 3.23 feet above that of the chain gage.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of gravel and rock. Low stages at the chain gage are affected by backwater from the dam at Ironbridge. Control for low stages at the staff gage is at a riffle about 200 feet downstream from the gage, where the bed is composed of gravel and large stones; probably permanent. Control for medium and high stages, for both gages, is the dam at Ironbridge.

Extremes of Stage.—Staff Gage. Maximum gage height during the year, estimated from hydrograph, 7.6 feet at 11 p. m., April 6; minimum, 1.12 feet at 8.30 a. m. October 11.

Chain Gage. Maximum gage height during the year, estimated from hydrograph, 10.4 feet at 11 p. m. April 6; minimum, 2.84 feet at 5 p. m. July 16: a stage of 1.95 feet was observed at 8.30 a. m. August 8, when repairs were being made to the dam at Ironbridge.

The following discharge measurement was made by H. J. McIntyre: No. 46, August 18: Gage height, 1.28 feet; discharge, 84.8 second-feet. Measurement made by wading 200 feet downstream from the gage.

Daily Mean Gage Height, in feet, of Perkiomen Creek at Graters Ford (Staff Gage), for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.44	1.24	1.46	1.98	2.28	2.17	2.24	2.24	1.84	2.10	1.27	1.22
2	1.40	1.25	1.33	1.72	2.31	2.18	2.27	2.08	1.72	1.81	1.26	1.26
3	1.30	1.24	1.32	3.58	2.31	2.18	2.18	1.94	1.65	1.69	1.26	1.32
4	1.27	1.20	1.26	3.48	2.37	2.20	2.18	1.82	1.61	1.64	1.24	1.26
5	1.24	1.24	1.52	2.44	2.80	2.24	2.17	1.70	1.54	1.59	1.22	1.27
6	1.21	1.23	2.40	2.14	3.32	2.34	3.84	1.68	1.56	1.62	1.24	1.22
7	1.22	1.25	3.06	2.06	2.88	2.46	5.03	1.69	1.54	1.56	1.27	1.22
8	1.20	1.20	2.32	2.09	2.56	2.73	2.92	2.51	1.67	1.59	1.21	1.24
9	1.19	1.20	1.67	2.03	2.42	2.92	2.56	3.49	1.72	1.85	1.24	1.30
10	1.17	1.25	1.38	2.00	2.44	2.88	2.45	2.90	1.58	1.68	1.34	1.32
11	1.14	1.23	1.32	3.29	2.38	3.01	2.28	2.52	1.51	1.56	1.31	1.26
12	1.16	1.23	1.36	3.55	2.35	3.39	2.15	4.85	1.52	1.56	1.93	1.25
13	1.16	1.20	1.38	2.64	2.37	3.06	2.04	3.52	1.70	1.64	2.19	1 24
14	1.17	1.18	1.42	2.34	2.34	2.78	1.96	2.6	1.60	1.58	2. 0	1.28
15	1.19	1.22	1.42	2.24	2.30	2.66	1.8	2.80	1.74	1.54	1.9	1.25
16	1.22	1.22	1.44	3.08	2.32	2.38	1.84	2.68	1.78	1.46	1.72	1.25
17	1.21	1.21	1.46	3.88	2.38	2.25	1.84	2.36	1.66	1.40	1.59	1.30
18	1.24	1.20	1.49	2.82	2.42	2.20	2.43	2.32	2.5	1.52	1.31	1.30
19	1.44	1.19	1.50	2.47	2.40	2.08	3.46	2.28	2.78	1.36	1.28	1.24
20	1.44	1.19	1.50	2.34	3.18	1.96	2.84	2.02	2.76	1.35	1.26	1.26
21	1.34	1.16	1.51	2.22	2.92	2.18	2.48	2.20	2.20	1.32	1.29	1.30
22	1 28	1.22	1.63	2.20	2.50	2.44	2.40	2.24	1.80	1.35	1.26	1.32
23	1.34	1.28	1.81	2.17	2.42	2.24	2.24	2.08	1.58	2.10	1.26	1.34
24	1.88	1.22	1.69	2.18	2.40	2.12	2.60	2.03	1.52	1.68	1.26	1.28
25	1.60	1.24	1.66	3.26	2.37	2.04	1.94	1.94	1.72	1.5	1.34	1.26
26	1.42	1.21	1.68	2.60	2.40	2.44	1.88	1.77	2.47	1.48	1.33	1.26
27	1.32	1.24	1.56	2.49	2.34	2.47	1.82	1.76	2.42	1.45	1.28	1.28
28	1.32	1.20	1.62	2.39	2.38	2.30	1.77	1.86	2.51	1.37	1.26	1.26
29	1.26	1.19	1.58	2.37	2.21	2.20	1.90	2.06	3.16	1.34	1.26	1.32
30	1.27	1.49	1.60	2.38	-------	2.28	1.90	2.17	2.51	1.30	1.25	3.08
31	1.24	-------	2.02	2.33	-------	2.22	-------	2.03	-------	1.30	1.24	-------

Note.—Stage-discharge relation Jan. 6-11, 21-25 and Jan. 28 to Feb. 4 affected by ice.

Daily Mean Gage Height, in feet, of Perkiomen Creek at Graters Ford (Chain Gage), for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.84	3.74	4.02	4.17	3.34	3.32	4.56	4.50	4.18	4.18	3.34	3.52
2	3.72	3.72	3.82	3.76	3.35	3.31	4.64	4.33	4.02	4.08	3.40	3.66
3	2.88	3.76	3.72	5.77	3.40	3.28	4.31	4.28	3.94	3.94	3.38	3.77
4	3.95	3.69	3.70	5.55	3.46	3.31	4.33	4.15	3.88	3.83	3.22	3.81
5	3.81	3.60	4.17	4.24	4.01	3.36	4.28	4.04	3.82	3.89	3.08	3.79
6	3.82	3.68	5.48	3.37	4.57	3.43	6.11	4.02	3.56	3.89	3.16	3.90
7	3.88	3.69	6.13	3.20	4.17	3.58	7.08	4.08	3.80	3.56	2.05	3.96
8	3.74	3.66	4.70	3.09	3.88	3.77	4.90	4.76	4.06	3.68	1.96	3.90
9	3.72	3.70	3.98	3.08	3.66	3.91	4.56	5.26	4.00	3.97	2.75	3.92
10	3.80	3.68	3.76	3.03	3.61	3.86	4.52	4.59	3.86	3.72	3.37	3.98
11	3.78	3.76	3.58	4.28	3.55	4.00	4.50	4.38	3.61	3.24	3.38	3.92
12	3.32	3.66	3.44	4.68	3.46	4.90	4.50	6.42	3.64	3.38	4.37	3.84
13	3.77	3.64	3.32	3.68	3.43	4.81	4.36	5.38	4.08	3.66	4.11	3.88
14	3.88	3.70	3.28	3.22	3.38	4.66	4.28	4.58	4.06	3.44	3.90	3.98
15	3.80	3.62	3.34	3.24	3.42	4.67	4.29	4.95	4.08	3.08	3.76	3.94
16	3.74	3.67	3.26	4.37	3.40	4.66	4.24	4.42	4.03	2.92	3.56	3.89
17	3.70	3.74	3.22	5.75	3.45	4.50	4.24	4.40	3.73	2.98	3.69	3.82
18	3.76	3.77	3.26	4.40	3.44	4.38	5.89	4.36	5.30	3.54	3.55	3.87
19	4.63	3.68	3.25	3.81	3.42	4.30	7.24	4.35	5.88	3.68	3.46	3.85
20	4.57	3.64	3.23	3.33	4.16	4.24	5.47	4.26	5.82	3.87	3.52	3.92
21	4.16	3.65	3.22	3.22	4.13	4.58	4.51	4.38	4.77	3.86	3.50	3.98
22	3.95	3.64	3.46	3.24	3.65	4.89	4.42	4.34	4.31	3.80	3.44	4.02
23	4.28	3.81	3.73	3.24	3.56	4.59	4.34	4.32	3.70	4.32	3.44	4.06
24	5.48	3.77	3.46	3.23	3.52	4.36	4.26	4.30	3.62	4.12	3.59	3.96
25	4.59	3.74	3.30	4.44	3.50	4.30	4.26	4.22	3.88	4.08	3.73	3.91
26	4.28	3.65	3.33	3.69	3.43	4.68	4.28	4.07	4.26	4.10	3.56	3.96
27	4.10	3.62	3.26	3.54	3.38	4.60	4.16	4.06	4.22	3.98	3.56	3.96
28	3.95	3.66	3.40	3.40	3.34	4.52	4.06	4.16	4.34	3.81	3.60	4.00
29	3.84	3.62	3.32	3.44	3.33	4.42	4.24	4.28	5.28	3.70	3.54	4.00
30	3.86	4.20	3.37	3.38	-------	4.48	4.08	4.30	4.42	3.43	3.66	6.09
31	3.77	-------	4.15	3.42	-------	4.40	-------	4.22	-------	3.38	3.62	-------

Note.—Stage-discharge relation affected Oct. 3, 12, Aug. 7 and 8 by repairs to dam at Ironbridge and Jan. 6-11, 21-25, and Jan. 28 to Feb. 4 by ice.

DELAWARE BASIN—STATION NO. 16

BRANDYWINE CREEK AT CHADDS FORD

Location.—At two-span steel railroad bridge, Pennsylvania Railroad, Chadds Ford, Delaware County.

Drainage Area.—285 square miles.

Records Available.—August 1, 1911, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by H. W. Guest. Elevation of gage zero 150.18 feet, United States Geological Survey datum.

Discharge Measurements.—Made from upstream side of bridge.

Channel and Control.—The right bank is low and the stream begins to overflow a flat 700 feet wide at a stage of about 6 feet. Left bank is high and not subject to overflow. Bed is composed of mud, gravel and stones. Control is at the first of a series of low riffles, about 150 feet downstream from the gage, where the bed is composed of gravel; shifts occasionally.

Extremes of Discharge.—Maximum stage during the year, 10.0 feet observed at midnight January 16-17 (discharge, 9,920 second-feet); minimum, 0.82 foot at 7.30 a. m. October 20 and 4 p. m. October 22 (discharge, 96 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Regulation.—Fluctuations in stage during low water are caused by the operation of a mill about 200 feet upstream from the station.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined between 100 and 2,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

The following discharge measurement was made by H. J. McIntyre: No. 42, August 19: Gage height, 1.40 feet; dicharge, 238 second-feet.

Daily Mean Gage Height, in feet, of Brandywine Creek at Chadds Ford, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.96	1.11	2.49	1.79	1.95	1.97	2.08	2.91	2.21	2.12	1.49	1.27
2	.95	1.15	1.47	1.99	1.85	1.99	2.27	2.46	2.16	1.97	1.47	1.26
3	.97	1.14	1.32	4.45	1.83	2.10	2.41	2.26	2.05	1.91	1.43	1.61
4	.92	1.12	1.20	3.14	1.81	2.35	2.45	2.17	1.90	1.87	1.42	1.34
5	.91	1.09	2.19	2.25	3.12	2.82	2.79	2.09	1.86	1.83	1.41	1.27
6	.87	1.07	2.23	2.17	4.57	2.61	5.08	2.07	1.86	1.81	1.39	1.38
7	.88	1.05	1.72	1.96	2.22	2.49	7.18	2.07	2.15	1.84	1.40	1.29
8	.89	1.06	1.62	1.89	2.09	2.30	5.14	2.14	2.02	1.96	1.39	1.28
9	.87	1.06	1.53	1.81	2.07	2.06	3.46	2.17	2.12	2.26	1.37	1.27
10	.88	1.05	1.52	1.83	2.01	2.09	3.05	2.23	2.11	1.90	1.40	1.33
11	.87	1.06	1.47	4.16	1.97	2.39	2.89	4.35	2.01	1.75	1.54	1.31
12	.90	1.05	1.44	3.52	1.95	3.68	2.83	5.32	2.74	1.67	3.27	1.30
13	.89	1.06	1.38	2.18	1.94	3.52	2.73	3.55	2.57	2.01	2.13	1.27
14	.91	1.05	1.43	1.99	1.91	3.04	2.66	2.76	3.31	2.01	1.71	1.22
15	.89	1.04	1.43	1.91	1.91	2.83	2.59	2.97	2.49	1.71	1.51	1.25
16	.97	1.07	1.41	3.23	1.90	2.72	2.51	2.71	2.28	1.67	1.41	1.25
17	.88	1.09	1.41	7.08	1.89	2.64	2.41	2.41	2.13	1.66	1.41	1.22
18	.86	1.10	1.37	4.36	1.91	2.41	2.45	2.39	2.02	1.60	1.39	1.23
19	.85	1.11	1.36	2.48	1.89	2.33	4.16	2.38	3.41	1.54	1.37	1.21
20	.83	1.12	1.34	2.09	6.14	2.25	2.84	2.43	3.32	1.52	1.37	1.22
21	.86	1.09	1.33	2.12	5.97	2.33	2.74	2.65	2.42	1.50	1.38	1.21
22	.84	1.06	1.64	2.12	3.92	2.82	2.55	2.40	2.07	1.81	1.39	1.37
23	1.04	1.11	2.64	2.15	2.58	2.65	2.48	2.33	1.95	4.41	1.35	1.39
24	3.98	1.37	1.98	2.16	1.97	2.53	2.45	2.23	1.95	1.90	1.33	1.24
25	3.03	1.26	1.69	6.70	1.97	2.29	2.41	2.38	1.89	1.74	1.52	1.17
26	1.71	1.16	1.58	4.60	1.93	2.18	2.37	2.23	2.09	1.65	2.32	1.17
27	1.26	1.15	1.49	2.38	1.97	2.15	2.29	2.29	2.14	1.58	1.69	1.15
28	1.09	1.11	2.38	2.19	1.96	2.08	2.23	2.35	2.74	1.53	1.40	1.13
29	1.05	1.13	1.81	2.11	1.96	2.04	2.22	2.35	4.27	1.49	1.33	1.37
30	1.01	2.03	2.09	2.10	-------	2.04	2.24	2.37	2.61	1.52	1.31	6.42
31	1.05	-------	1.69	2.04	-------	2.05	-------	2.29	-------	1.51	1.30	-------

Note.—Stage-discharge relation Jan. 5, 6 and 21-23 affected by ice.

Daily discharge, in second-feet, of Brandywine Creek at Chadds Ford, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	124	162	680	382	440	440	500	868	542	500	276	208
2	122	173	269	459	401	459	565	657	521	440	269	205
3	126	170	223	1,610	401	500	634	565	480	420	257	312
4	115	165	187	962	382	611	657	521	420	401	253	229
5	112	156	542	500	962	821	821	500	401	401	250	208
6	105	151	566	460	1,740	727	2,040	480	401	382	244	241
7	107	146	346	440	542	680	3,750	480	521	401	247	214
8	108	149	312	420	500	588	2,040	521	459	440	244	211
9	105	149	296	382	480	480	1,160	521	500	565	238	208
10	107	146	279	401	459	500	915	565	500	420	247	226
11	105	149	269	1,530	440	634	868	1,640	459	364	296	220
12	110	146	260	1,160	440	1,260	821	2,170	774	329	1,060	217
13	108	149	241	542	440	1,160	774	1,210	727	459	521	208
14	112	146	257	459	420	915	774	821	1,060	459	346	193
15	108	143	257	426	420	821	727	915	680	346	279	202
16	126	151	250	1,010	420	774	680	774	588	329	250	202
17	107	156	250	3,630	420	727	634	634	521	329	250	193
18	103	159	238	1,640	420	634	657	634	459	312	244	196
19	102	162	235	680	420	611	1,530	634	1,110	296	238	190
20	98	165	229	500	2,740	565	821	657	1,060	279	228	193
21	103	156	226	420	2,660	611	774	727	634	279	241	190
22	100	149	329	420	1,370	821	727	634	480	382	244	238
23	143	162	727	440	727	727	680	611	440	1,640	232	244
24	1,420	238	459	521	440	680	657	565	440	420	226	199
25	915	205	346	3,240	440	588	634	634	420	364	279	179
26	346	176	312	1,740	440	542	611	565	500	329	588	179
27	205	173	276	634	440	521	588	588	521	312	346	173
28	156	162	634	542	440	500	565	611	774	296	247	167
29	146	167	382	500	440	480	542	611	1,580	276	226	238
30	136	480	500	500	-------	480	565	611	727	279	220	2,970
31	146	-------	346	480	-------	480	-------	588	-------	279	217	-------

Note.—Discharge Jan. 5, 6 and 21-23 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for other streams.

Monthly discharge of Brandywine Creek at Chadds Ford, for the year ending Sept. 30, 1924.

(Drainage area 285 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	1,420	98	194	0.681	0.79
November	480	143	172	.604	.67
December	680	187	346	1.21	1.40
January	3,630	382	873	3.06	3.53
February	2,740	382	699	2.45	2.64
March	1,260	440	656	2.30	2.65
April	3,750	500	924	3.24	3.62
May	2,170	480	726	2.55	2.94
June	1,580	401	623	2.19	2.44
July	1,460	276	411	1.44	1.66
August	1,060	217	300	1.05	1.21
September	2,970	167	302	1.06	1.18
The Year	3,750	98	518	1.82	24.73

SUSQUEHANNA BASIN

NORTH BRANCH SUSQUEHANNA RIVER AT BINGHAMTON, N. Y.

Location.—At four-span steel highway bridge, Washington Street, Binghamton, Broome County, about 500 feet upstream from mouth of Chenango River.

Drainage Area.—2,400 square miles.

Records Available.—July 31, 1901, to December 31, 1912, and January 23, 1915, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read to half-tenths twice daily by A. L. Coleman; during high stages more frequently. Elevation of gage zero 821.49 feet, United States Geological Survey datum.

Discharge Measurements.—Measurements were discontinued in 1912 as the stage-discharge relation is sometimes affected by back-water from the Chenango River.

Channel and Control.—Banks are high and not subject to overflow. Bed is composed of fine and coarse gravel.

Extremes of Stage.—Maximum gage height during the year, estimated from hydrograph, 17.0 feet at midnight September 30—October 1, 1924, on a rising stage; a crest stage of 15.25 feet was observed at 2 p. m. April 7; minimum, 2.05 feet at 5 p. m. July 28.

Ice.—Stage-discharge relation usually affected by ice. Gage heights obtained at this station are for Flood Warning purposes.

Daily Mean Gage Height, in feet, of North Branch Susquehanna River at Binghamton, N. Y., for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.43	2.90	5.05	3.95	3.65	2.60	6.53	4.05	3.20	2.60	2.15	2.60
2	2.42	2.95	5.43	3.95	3.65	2.45	5.25	5.00	3.00	2.55	2.15	2.55
3	2.40	2.77	4.70	4.25	3.15	2.35	4.45	4.87	2.85	2.47	2.20	2.45
4	2.30	2.75	4.23	5.52	2.95	2.53	4.63	5.53	2.75	2.45	2.25	2.30
5	2.27	2.67	4.15	5.30	2.85	2.75	6.33	5.75	2.80	2.43	2.23	2.30
6	2.25	2.61	4.90	4.28	3.37	3.50	7.73	5.35	3.03	2.40	2.23	2.30
7	2.25	2.65	5.57	3.50	3.95	4.35	14.37	4.80	3.30	2.35	2.15	2.50
8	2.25	2.97	5.30	3.85	3.15	4.10	13.63	4.60	3.20	2.37	2.20	2.50
9	2.20	3.21	4.95	4.10	3.10	3.65	10.40	4.45	3.00	2.55	2.25	2.40
10	2.25	3.25	4.57	3.90	2.85	3.10	8.20	4.95	2.90	2.57	2.25	2.60
11	2.25	2.95	4.75	6.87	2.70	2.95	7.50	4.95	2.95	2.57	2.17	3.20
12	2.25	2.91	4.75	11.57	2.80	2.90	7.05	5.50	2.80	2.35	2.23	3.05
13	2.20	2.95	4.37	9.53	3.00	3.17	6.70	6.83	2.70	2.25	2.25	2.85
14	2.20	2.85	4.45	6.95	3.17	3.05	6.50	6.50	2.65	2.43	2.23	2.80
15	2.23	2.75	4.33	5.55	2.95	2.85	6.67	6.55	2.65	2.45	2.22	2.70
16	2.23	2.75	3.95	5.57	3.15	2.95	6.30	6.55	2.65	2.47	2.20	2.62
17	2.20	2.77	3.67	6.80	3.15	3.05	5.60	5.95	2.63	2.45	2.20	2.62
18	2.20	2.75	3.70	6.13	2.55	3.23	5.43	5.45	2.67	2.45	2.12	2.52
19	2.20	2.71	3.53	4.95	3.45	2.87	7.73	5.15	2.57	2.50	2.12	2.42
20	2.25	2.66	3.27	4.40	3.00	2.70	8.25	5.10	2.43	2.45	2.10	2.40
21	2.25	2.67	3.33	3.87	2.95	2.80	7.73	4.55	2.40	2.45	2.20	2.35
22	2.25	2.65	3.40	3.27	3.05	2.97	7.20	4.25	2.45	2.40	2.20	2.35
23	2.33	2.60	4.07	3.80	3.20	4.20	7.95	4.03	2.47	2.43	2.15	2.35
24	3.65	2.63	4.77	4.10	3.05	6.07	7.25	3.73	2.53	2.25	2.10	2.38
25	4.17	2.70	4.47	3.60	3.05	6.40	6.37	3.65	2.70	2.25	2.10	2.42
26	3.65	2.70	4.00	3.95	2.77	5.65	5.67	3.65	2.90	2.25	3.82	2.40
27	3.25	2.70	3.87	4.05	2.90	4.90	4.97	3.47	2.73	2.12	3.42	2.35
28	3.05	2.85	3.63	4.65	2.75	4.75	4.50	3.43	2.57	2.07	2.98	2.30
29	2.83	2.90	3.67	3.87	2.57	5.70	4.30	3.55	2.57	2.07	2.85	2.22
30	2.75	3.50	3.50	3.40	-------	7.93	4.05	3.45	2.87	2.10	2.70	10.88
31	2.85	-------	3.43	3.30	-------	7.73	-------	3.40	-------	2.13	2.60	-------

Note.—Stage-discharge relation Jan. 8-11, Jan. 22 to Feb. 5 and Feb. 11 to Mar. 5 affected by ice.

CHEMUNG RIVER AT CORNING, N. Y.

Location.—At four-span steel highway bridge, Bridge Street, Corning, Steuben County, about one and three-quarter miles downstream from confluence of Cohocton and Tioga rivers.

Drainage Area.—1,940 square miles.

Records Available.—December 1, 1909, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read to tenths once daily by C. H. Voorhees, Jr.; during high stages more frequently. Elevation of gage zero 912.82 feet, United States Geological Survey datum.

Channel and Control.—River is confined by dykes which overflow at gage height 23.6 feet. Bed is composed of gravel.

Extremes of Stage.—Maximum gage height during the year, 14.7 feet at 8 a. m. April 7; minimum, 2.0 feet from 8 a. m. October 9 to 8 a. m. October 23.

Ice.—Stage-discharge relation usually affected by ice. Gage heights obtained at this station are for Flood Warning purposes.

Daily Mean Gage Height, in feet, of Chemung River at Corning, N. Y., for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.3	2.3	3.2	7.5	3.45	2.9	5.65	4.3	3.45	3.5	2.3	2.3
2	2.3	2.2	3.2	5.4	3.3	2.9	4.8	4.4	3.25	3.0	2.3	2.3
3	2.2	2.2	3.1	5.1	3.2	2.9	4.6	4.2	3.2	3.0	2.3	2.3
4	2.2	2.2	3.0	5.3	3.2	2.9	6.25	4.75	3.2	-------	2.3	2.35
5	2.2	2.2	2.9	4.4	3.25	5.35	7.9	4.55	3.25	2.8	2.3	2.45
6	2.1	2.2	3.9	3.9	5.45	6.45	9.6	4.2	3.5	2.8	2.3	2.4
7	2.1	2.2	5.05	3.6	4.15	4.8	12.05	4.1	3.35	2.95	2.3	2.4
8	2.1	2.2	4.2	3.75	3.35	4.45	8.2	3.85	3.2	3.45	2.3	2.35
9	2.0	2.2	3.75	3.6	3.2	3.95	6.8	5.55	3.3	4.6	2.3	2.55
10	2.0	2.2	3.65	3.4	3.1	3.7	6.3	7.0	3.2	3.85	2.3	2.7
11	2.0	2.3	4.0	5.3	3.0	3.55	5.7	6.0	3.2	3.25	2.3	2.55
12	2.0	2.4	3.9	7.55	3.0	3.3	5.25	8.85	3.1	3.0	2.3	2.4
13	2.0	2.35	3.7	5.35	3.0	3.3	5.0	9.9	3.2	3.1	2.3	2.4
14	2.0	2.2	3.5	4.85	2.9	3.2	4.9	7.65	3.2	3.3	2.3	2.4
15	2.0	2.2	3.3	4.25	2.9	3.1	4.85	7.0	3.1	3.2	2.3	2.4
16	2.0	2.2	3.3	5.0	2.9	3.1	4.55	6.5	3.1	3.05	2.3	2.3
17	2.0	2.2	3.3	9.35	2.9	3.25	4.45	5.95	3.1	2.9	2.3	2.3
18	2.0	2.2	3.1	5.7	2.9	3.3	6.85	5.8	2.9	2.8	2.3	2.3
19	2.0	2.2	3.0	4.9	2.9	3.95	9.05	6.35	2.9	2.75	2.3	2.3
20	2.0	2.2	2.9	4.35	2.9	3.9	6.95	5.3	2.95	2.6	2.3	2.3
21	2.0	2.2	2.9	3.9	2.9	4.4	6.8	5.0	3.9	2.5	2.3	2.3
22	2.0	2.2	3.0	3.65	2.9	4.2	6.55	4.85	3.45	2.5	2.3	2.3
23	2.0	2.2	4.45	3.8	2.9	5.7	6.15	4.4	3.2	2.5	2.3	2.3
24	2.05	2.2	5.0	3.7	2.9	6.4	5.4	4.1	3.1	2.5	2.3	2.3
25	3.05	2.2	4.4	3.6	2.9	5.9	4.95	4.1	3.3	2.5	2.55	2.3
26	3.0	2.2	3.85	3.5	2.9	5.65	4.65	4.2	3.95	2.5	3.35	2.3
27	3.0	2.3	3.7	3.5	2.9	5.15	4.45	4.0	3.45	2.45	2.65	2.3
28	2.75	2.3	3.6	3.4	2.9	5.6	4.25	3.85	3.25	2.4	2.4	2.3
29	2.6	-------	3.6	3.4	2.9	7.45	4.0	3.7	4.2	2.4	2.3	2.5
30	2.5	2.5	3.6	3.2	-------	8.45	3.95	3.7	4.0	2.35	2.3	9.95
31	2.4	-------	3.9	3.4	-------	6.7	-------	3.6	-------	2.3	2.3	-------

Note.—Gage height Nov. 29 and July 4 not observed. Stage-discharge relation Jan. 8-11, Jan. 22 to Feb. 5 and Feb. 11 to Mar. 5 affected by ice.

SUSQUEHANNA BASIN—STATION NO. 3

NORTH BRANCH SUSQUEHANNA RIVER AT TOWANDA

Location.—At four-span steel highway bridge, Bridge Street, Towanda, Bradford County.

Drainage Area.—7,770 square miles.

Records Available.—December 1, 1892, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by Hiram E. Bull. Elevation of gage zero 693.4 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of gravel and rock. Control is at a riffle extending downstream from right end of bridge to island and from left side of island to left bank; changed during heavy ice flow of March 1920.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 17.8 feet at 8 p. m. April 7 (discharge, 133,000 second-feet); minimum, 0.60 foot October 21 (discharge, 870 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation changed on April 8, 1924, and also affected by ice. Two rating curves used; one applicable to April 8, 1924, and the other since that date. Rating curves fairly well defined between 800 and 20,000 second-feet and well defined from 20,000 to 167,000 second-feet. Gage read to half tenths twice daily; during high stages more frequently. Daily discharge ascertained by applying daily mean height to rating table. Results good.

The following discharge measurement was made by J. M. Snavely: No. 32, August 14: Gage height, 1.10 feet; discharge, 1,680 second-feet.

Daily Mean Gage Height, in feet, of North Branch Susquehanna River at Towanda, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.18	1.72	3.78	4.10	3.40	2.45	7.05	3.45	2.62	2.25	0.86	1.36
2	1.08	1.80	4.50	4.90	3.60	2.30	5.45	4.20	2.45	1.95	.92	1.22
3	1.00	1.75	4.05	4.22	3.30	2.40	4.50	4.25	2.35	1.75	1.01	1.15
4	.96	1.62	3.50	4.80	2.80	2.35	4.70	4.10	2.15	1.64	1.06	1.15
5	.89	1.54	3.32	4.92	2.35	3.30	7.50	4.60	2.10	1.56	1.04	1.30
6	.86	1.50	3.98	3.70	3.25	5.85	11.55	4.60	2.35	1.50	.99	1.25
7	.82	1.50	5.19	2.85	3.75	4.57	16.55	4.15	2.50	1.50	.91	1.30
8	.80	1.68	5.05	2.80	3.65	4.38	15.02	3.85	2.75	1.52	1.06	1.28
9	.79	1.98	4.28	3.00	2.55	3.50	11.38	3.85	2.45	2.20	1.08	1.35
10	.75	2.12	4.05	3.12	2.30	3.00	8.75	5.70	2.35	2.35	1.11	1.48
11	.76	2.05	4.15	4.62	2.15	2.55	7.35	5.60	2.28	2.02	1.08	1.60
12	.76	1.91	4.22	10.88	1.98	2.40	6.55	7.30	2.10	1.75	1.08	2.02
13	.76	1.86	3.85	9.54	3.30	2.38	5.88	10.76	1.98	1.62	1.09	1.92
14	.70	1.82	3.75	7.05	3.00	2.32	5.60	8.28	1.91	1.70	1.05	1.78
15	.75	1.75	3.75	5.10	3.05	2.28	5.72	7.55	1.90	1.78	1.00	1.68
16	.75	1.68	3.30	4.37	2.85	2.00	5.50	6.92	1.88	1.58	1.02	1.77
17	.70	1.65	3.05	7.66	2.70	1.95	5.10	6.10	1.78	1.50	1.00	1.65
18	.70	1.65	2.92	7.97	2.70	2.10	5.42	5.25	1.68	1.50	.95	1.60
19	.69	1.59	2.75	5.29	2.60	2.32	10.15	5.32	1.68	1.54	.90	1.46
20	.65	1.52	2.58	4.35	2.50	2.45	8.82	5.25	1.64	1.60	.90	1.35
21	.60	1.50	2.50	3.80	2.50	2.55	8.02	4.50	1.82	1.55	.90	1.30
22	.66	1.48	2.50	2.75	2.50	2.84	7.15	4.15	2.10	1.38	.90	1.20
23	.78	1.42	3.20	3.70	2.50	3.31	7.48	3.90	1.95	1.30	.94	1.11
24	1.40	1.40	4.60	3.80	2.50	5.73	6.80	3.55	1.80	1.22	.93	1.12
25	3.04	1.42	4.45	4.15	2.50	6.35	6.00	3.35	1.91	1.15	1.04	1.11
26	3.10	1.52	3.82	3.70	2.50	6.00	5.18	3.32	2.00	1.10	2.92	1.20
27	2.60	1.62	3.45	3.35	2.50	5.22	4.52	3.15	2.22	1.08	2.70	1.14
28	2.15	1.72	3.28	3.30	2.50	4.71	4.10	3.00	1.95	1.02	2.30	1.02
29	1.88	1.82	3.20	3.60	2.50	6.12	3.75	3.10	2.50	.99	1.95	1.15
30	1.72	2.19	3.10	3.55	-------	9.19	3.55	3.10	2.75	.91	1.78	8.93
31	1.60	-------	3.10	3.30	-------	8.70	-------	2.85	-------	.89	1.58	-------

Note.—Stage-discharge relation Jan. 3-6, Jan. 23 to Feb. 4 and Feb. 13 to Mar. 5 affected by ice.

Daily discharge, in second-feet, of North Branch Susquehanna River at Towanda, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,740	2,830	12,300	14,100	7,000	1,900	32,200	10,100	6,150	4,700	1,290	2,180
2	1,570	3,140	16,500	18,900	6,000	2,000	22,000	14,700	5,500	3,700	1,300	1,870
3	1,410	3,000	13,500	15,000	5,500	2,200	16,500	14,700	5,090	3,120	1,510	1,780
4	1,340	2,600	10,000	12,000	5,000	2,000	17,700	14,100	4,350	2,860	1,000	1,780
5	1,260	2,480	9,000	9,500	4,900	4,000	35,400	17,100	4,180	2,620	1,000	2,070
6	1,190	2,360	13,500	8,000	9,050	24,500	66,000	17,100	5,090	2,500	1,510	1,970
7	1,120	2,360	20,700	6,970	12,300	17,100	116,000	14,700	5,700	2,500	1,510	2,070
8	1,120	2,860	19,500	6,970	11,200	15,900	97,300	12,300	7,070	2,500	1,600	2,070
9	1,120	3,750	15,300	8,010	6,000	10,600	64,400	12,300	5,500	4,520	1,680	2,180
10	1,000	4,070	13,500	8,530	4,770	8,010	44,600	23,900	5,090	5,090	1,680	2,500
11	1,000	3,910	14,700	17,100	4,240	6,000	34,800	23,300	4,890	3,850	1,680	2,730
12	1,000	3,440	14,700	60,400	3,750	5,150	29,600	34,100	4,180	3,120	1,680	3,850
13	1,000	3,290	12,300	49,700	3,290	5,150	25,100	58,900	3,850	2,730	1,680	3,510
14	990	3,140	12,300	32,200	2,800	4,770	23,300	41,000	3,540	2,980	1,600	3,250
15	1,000	3,000	12,300	20,100	2,600	4,770	23,900	36,100	3,540	3,250	1,510	2,980
16	1,000	2,860	9,600	15,900	2,400	3,750	22,600	31,500	3,540	2,730	1,510	3,100
17	990	2,730	8,010	36,800	2,400	3,600	20,100	26,400	3,250	2,500	1,510	2,860
18	990	2,730	7,490	38,900	2,200	4,070	22,000	20,700	2,980	2,500	1,440	2,730
19	990	2,600	6,970	21,300	1,900	4,770	55,000	21,300	2,980	2,620	1,360	2,390
20	930	2,360	6,000	15,900	1,900	5,360	44,600	20,700	2,830	2,730	1,360	2,180
21	870	2,360	5,560	12,200	1,800	6,000	38,900	16,500	3,250	2,620	1,360	2,070
22	930	2,360	5,560	6,970	1,890	6,970	33,500	14,700	4,180	2,280	1,360	1,870
23	1,120	2,140	9,050	5,500	1,800	9,600	35,400	12,900	3,700	2,070	1,440	1,680
24	2,140	2,140	17,100	5,000	1,700	23,900	30,800	11,200	3,250	1,870	1,440	1,680
25	8,010	2,140	15,900	4,600	1,700	28,300	25,800	10,100	3,540	1,780	1,600	1,680
26	8,530	2,360	12,300	4,000	1,700	25,800	20,700	9,600	3,850	1,680	7,550	1,870
27	6,000	2,620	10,100	4,000	1,700	20,700	16,500	9,060	4,520	1,680	6,600	1,780
28	4,240	2,860	9,600	4,000	1,800	17,700	14,100	8,040	3,700	1,510	4,890	1,510
29	3,440	3,140	9,050	4,400	1,800	26,400	12,300	8,550	5,700	1,510	3,700	1,780
30	2,860	4,410	8,530	6,000	-------	47,500	11,200	8,550	7,070	1,360	3,250	45,300
31	2,600	-------	8,530	7,000	-------	43,800	-------	7,070	-------	1,360	2,730	-------

Note.—Discharge Jan. 3-6, Jan. 23 to Feb. 4 and Feb. 13 to Mar. 5 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for North Branch Susquehanna River at Wilkes-Barre and Danville.

Monthly discharge of North Branch Susquehanna River at Towanda, for the year ending Sept. 30, 1924.

(Drainage area 7,770 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	8,530	870	2,060	0.265	0.31
November	4,410	2,140	2,870	.369	.41
December	20,700	5,560	11,600	1.49	1.72
January	60,400	4,000	15,500	1.99	2.29
February	12,300	1,700	3,960	.510	.55
March	47,500	1,900	12,700	1.63	1.88
April	116,000	11,200	35,100	4.52	5.04
May	58,900	7,070	18,800	2.42	2.79
June	7,070	2,860	4,400	.566	.63
July	5,090	1,360	2,670	.344	.40
August	7,550	1,290	2,150	.277	.32
September	45,300	1,510	3,710	.477	.53
The Year	116,000	870	9,630	1.24	16.87

SUSQUEHANNA BASIN—STATION NO. 4

TOWANDA CREEK NEAR MONROETON

Location.—At single-span steel highway bridge about one and a half miles southwest of Monroeton, Bradford County.

Drainage Area.—218 square miles.

Records Available.—January 30, 1914, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by Leon D. Pepper.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Neither bank is subject to overflow. Bed is composed of coarse gravel. Control consists of the foundation timbers of an old wooden dam and a gravel bar which probably shifts.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 8.6 feet at 8 p. m. April 6 (discharge, about 20,000 second-feet); minimum, 1.67 feet at 7 a. m. September 28 (discharge, 10 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined between 10 and 500 second-feet and fairly well defined from 500 to 2,500 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for high stages when they are fair.

Discharge measurements of Towanda Creek near Monroeton, during the year ending Sept. 30, 1924.

No.	Date	Made by	Gage height	Discharge
			Feet	Sec.-ft.
29	Aug. 14a	H. J. McIntyre	1.99	45.7
30	14a	do	1.99	42.6

a Measurement made by wading 700 feet downstream from the gage.

Daily Mean Gage Height, in feet, of Towanda Creek near Monroeton, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.76	2.15	3.00	3.58	2.52	2.40	3.34	3.15	2.47	2.35	1.83	1.68
2	1.80	2.09	2.82	2.94	2.49	2.37	3.14	3.05	2.43	2.28	1.79	1.70
3	1.78	2.04	2.68	2.98	2.46	2.32	2.98	2.92	2.39	2.26	1.78	1.82
4	1.78	2.04	2.58	2.81	2.44	2.30	3.95	3.13	2.37	2.29	1.77	1.78
5	1.75	2.02	2.71	2.78	2.55	3.40	3.73	2.98	2.32	2.30	1.76	1.79
6	1.75	2.00	3.63	2.74	3.12	3.26	5.65	2.89	2.31	2.22	1.90	1.80
7	1.74	2.10	3.56	2.82	2.68	2.95	5.80	2.84	2.39	2.16	1.85	1.80
8	1.74	2.52	3.15	2.74	2.57	2.81	4.21	2.84	2.30	2.58	1.82	1.76
9	1.74	2.36	3.04	2.58	2.52	2.60	3.84	3.62	2.36	2.78	1.84	1.78
10	1.74	2.26	3.12	2.48	2.49	2.53	3.68	4.22	2.32	2.52	1.90	1.90
11	1.75	2.24	3.12	5.92	2.46	2.51	3.45	3.92	2.26	2.39	1.88	1.86
12	1.74	2.20	2.94	4.35	2.40	2.45	3.31	5.39	2.25	2.28	2.09	1.82
13	1.74	2.18	2.82	3.58	2.36	2.44	3.19	4.60	2.30	2.78	2.16	1.77
14	1.74	2.15	2.84	3.26	2.42	2.44	3.20	3.88	2.38	2.58	2.01	1.79
15	1.77	2.15	2.75	2.98	2.42	2.55	3.10	3.60	2.30	2.42	1.92	1.80
16	1.77	2.12	2.64	3.15	2.44	2.53	2.99	3.34	2.22	2.32	1.84	1.78
17	1.76	2.10	2.58	4.43	2.34	2.58	2.92	3.15	2.16	2.25	1.95	1.76
18	1.76	2.11	2.52	3.58	2.32	2.50	3.36	3.05	2.10	2.21	1.98	1.74
19	1.76	2.10	2.48	3.33	2.30	2.68	4.17	3.29	2.08	2.16	1.91	1.72
20	1.80	2.06	2.44	3.15	2.30	2.50	3.68	3.02	2.14	2.08	1.86	1.71
21	1.78	2.04	2.47	2.93	2.42	2.75	3.56	2.94	2.66	2.04	1.84	1.70
22	1.78	2.02	2.70	2.78	2.46	2.70	3.55	2.92	2.46	2.00	1.80	1.71
23	1.79	2.04	3.85	2.85	2.45	2.88	3.35	2.80	2.30	2.02	1.80	1.73
24	3.10	2.22	3.48	2.76	2.48	3.14	3.16	2.72	2.32	2.00	1.78	1.72
25	2.84	2.22	3.14	2.66	2.48	3.15	3.02	2.85	2.40	1.94	1.78	1.74
26	2.45	2.16	2.96	2.64	2.48	3.16	2.92	2.70	2.44	1.91	1.81	1.70
27	2.26	2.16	2.84	2.60	2.44	2.98	2.82	2.61	2.30	1.90	1.80	1.70
28	2.14	2.16	2.85	2.64	2.44	3.06	2.77	2.66	2.29	1.88	1.78	1.71
29	2.05	2.14	2.80	2.68	2.44	3.72	2.73	2.63	2.85	1.85	1.74	2.18
30	2.03	2.62	2.67	2.64	-------	3.90	2.71	2.62	2.50	1.86	1.70	7.10
31	2.10	-------	2.84	2.72	-------	3.59	-------	2.54	-------	1.85	1.69	-------

Note.—Stage-discharge relation Jan. 5-9 and Feb. 21 to Mar. 3 affected by ice.

Daily discharge, in second-feet, of Towanda Creek near Monroeton, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	12	41	395	930	136	60	663	502	118	82	14	11
2	13	31	282	356	125	60	495	430	105	66	13	11
3	13	25	265	392	115	65	382	343	92	62	13	14
4	13	25	159	276	108	70	1,360	488	88	68	12	13
5	12	22	220	190	148	720	1,100	382	75	70	12	13
6	12	20	985	140	480	591	5,030	324	72	54	16	13
7	12	32	877	150	205	362	5,660	294	92	43	14	13
8	12	136	502	110	155	276	1,740	294	70	159	14	12
9	12	85	423	95	136	167	1,220	930	85	259	14	13
10	12	62	480	121	125	140	1,040	1,740	75	136	16	16
11	12	58	480	5,990	115	132	772	1,290	62	92	15	15
12	12	50	356	2,000	95	112	634	4,440	60	66	31	14
13	12	46	282	930	85	108	532	2,480	70	259	43	12
14	12	41	294	591	102	108	540	1,290	90	159	21	13
15	12	41	242	382	102	148	465	930	70	102	17	13
16	12	36	186	502	108	140	388	663	54	75	14	13
17	12	32	159	2,180	80	159	343	502	43	60	18	12
18	12	34	136	930	75	128	682	430	32	52	19	12
19	12	32	121	654	70	205	1,660	616	30	43	16	11
20	13	27	108	502	70	128	1,040	409	39	30	15	11
21	13	25	118	350	70	242	877	356	196	25	14	11
22	13	22	215	259	65	215	877	343	115	20	13	11
23	13	25	1,220	300	65	318	672	270	70	22	13	12
24	465	54	804	248	60	495	510	226	75	20	13	11
25	294	54	495	196	60	502	409	300	95	18	13	12
26	112	43	369	186	60	510	343	215	108	16	13	11
27	62	43	294	167	60	382	282	172	70	16	14	11
28	39	43	300	186	60	437	254	196	68	15	13	11
29	26	39	270	205	60	1,040	232	181	300	14	12	46
30	24	177	201	186	-------	1,290	220	177	128	15	11	11,200
31	32	-------	294	226	-------	930	-------	144	-------	14	11	-------

Note.—Discharge Jan. 5-9 and Feb. 21 to Mar. 3 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Tunkhannock Creek at Dixon and Lycoming Creek near Trout Run.

Monthly discharge of Towanda Creek near Monroeton, for the year ending Sept. 30, 1924.

(Drainage area 218 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	465	12	43.1	0.198	0.23
November	177	20	46.7	.214	.24
December	1,220	108	370	1.70	1.96
January	5,990	95	643	2.95	3.40
February	480	60	110	.505	.54
March	1,290	60	330	1.51	1.74
April	5,660	220	1,010	4.63	5.17
May	4,440	144	689	3.16	3.64
June	300	30	88.2	.405	.45
July	259	14	68.8	.316	.36
August	43	11	15.7	.072	.08
September	11,200	11	386	1.77	1.98
The Year	11,200	11	317	1.45	19.79

SUSQUEHANNA BASIN—STATION NO. 5

TUNKHANNOCK CREEK AT DIXON

Location.—At single-span steel highway bridge, about two miles east of Tunkhannock, at Dixon, Wyoming County.

Drainage Area.—393 square miles.

Records Available.—January 28, 1914, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by N. L. Kneller.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—The right bank is high, steep, and does not overflow; the left is low but not subject to overflow. Bed is composed of coarse gravel. Control is at a riffle, where the bed is composed of boulders about 300 feet downstream from the gage; permanent.

Extremes of Discharge.—Maximum stage during the year, 13.10 feet observed at 5 p. m. September 30 (discharge, about 19,000 second-feet); minimum 0.95 foot at 8 a. m. August 4 (discharge, 30 second feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Ice effects considered negligible; stage-discharge relation probably permanent. Rating curve well defined between 30 and 4,000 second-feet. Gage read to quarter-tenths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

Discharge measurements of Tunkhannock Creek at Dixon, during the year ending Sept. 30, 1924.

No.	Date	Made by	Gage height	Discharge
			Feet	Sec.-ft.
33	Aug. 13a	H. J. McIntyre	1.52	131
34	14b	J. M. Snavely	1.38	68.4

a Measurement made by wading 1,500 feet upstream from the gage.
b Measurement made by wading 400 feet upstream from the gage.

Daily Mean Gage Height, in feet, of Tunkhannock Creek at Dixon, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.74	2.24	4.32	3.62	2.10	1.64	3.18	3.21	2.02	1.62	1.08	1.14
2	1.66	2.14	3.45	2.79	2.04	1.65	3.02	3.05	1.98	1.58	1.05	1.16
3	1.65	2.04	3.18	3.05	1.92	1.66	2.88	2.72	1.90	1.48	1.05	1.18
4	1.60	1.99	2.90	3.30	1.90	1.68	3.10	3.28	1.94	1.42	1.02	1.21
5	1.56	1.94	2.98	2.88	2.30	3.17	3.05	3.05	1.90	1.39	1.05	1.32
6	1.49	1.92	3.50	2.46	3.09	3.93	6.42	2.84	1.82	1.35	1.08	1.60
7	1.46	2.06	3.58	2.52	2.35	3.23	7.89	2.67	1.72	1.35	1.05	1.52
8	1.42	2.58	3.15	2.51	2.02	2.95	5.25	2.61	1.68	2.09	1.05	1.42
9	1.40	2.35	3.00	2.42	1.90	2.55	4.30	2.85	1.68	2.87	1.02	1.70
10	1.36	2.22	3.14	2.39	1.92	2.35	4.10	3.08	1.61	2.16	1.00	1.90
11	1.46	2.14	3.55	5.34	1.82	2.22	3.86	2.82	1.55	1.92	1.02	1.80
12	1.44	2.10	3.15	4.80	1.82	2.55	3.45	4.46	1.48	1.78	1.22	1.58
13	1.36	2.02	2.99	3.72	1.72	2.42	3.25	4.32	1.55	2.25	1.36	1.50
14	1.32	1.98	3.25	3.40	1.76	2.29	3.19	3.77	1.60	2.10	1.34	1.46
15	1.34	1.95	2.88	2.88	1.78	2.18	2.95	4.29	1.50	1.82	1.15	1.48
16	1.32	1.92	2.68	3.25	1.70	1.95	2.78	3.55	1.42	1.68	1.08	1.41
17	1.32	1.92	2.65	4.90	1.70	1.98	2.64	3.30	1.38	1.50	1.08	1.36
18	1.29	1.99	2.52	3.52	1.76	2.26	3.20	3.08	1.35	1.38	1.15	1.32
19	1.30	1.89	2.35	3.24	1.80	2.62	4.98	3.28	1.35	1.32	1.18	1.29
20	1.31	1.84	2.32	3.12	1.68	2.28	3.80	2.89	1.40	1.28	1.10	1.28
21	1.30	1.79	2.40	2.58	1.66	2.72	3.71	2.89	1.50	1.28	1.12	1.22
22	1.32	1.76	2.44	2.39	1.68	2.55	3.98	2.78	1.35	1.28	1.08	1.28
23	1.34	1.82	3.48	2.45	1.64	2.95	4.10	2.58	1.38	1.30	1.06	1.38
24	3.89	2.30	3.46	2.42	1.65	3.25	3.45	2.52	1.41	1.29	1.02	1.35
25	3.45	2.12	2.95	2.39	1.62	3.05	3.18	2.46	1.38	1.15	1.05	1.23
26	2.84	2.00	2.90	2.18	1.60	3.08	3.02	2.32	1.48	1.10	1.56	1.08
27	2.55	1.96	2.74	2.04	1.58	2.81	2.80	2.25	1.45	1.12	1.42	1.08
28	2.35	2.02	2.78	2.08	1.68	2.88	2.68	2.28	1.60	1.15	1.60	1.00
29	2.27	1.95	2.85	2.02	1.62	3.33	2.56	2.30	2.15	1.15	1.50	1.49
30	2.20	3.06	2.62	2.08	-------	4.23	2.50	2.32	1.88	1.12	1.32	10.08
31	2.36	-------	2.90	2.32	-------	3.65	-------	2.15	-------	1.14	1.21	-------

Daily discharge, in second-feet, of Tunkhannock Creek at Dixon, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	149	370	2,010	1,320	295	120	990	990	250	115	38	43
2	125	320	1,190	700	272	122	840	875	242	106	36	44
3	122	272	990	875	216	125	770	630	208	87	36	46
4	110	246	770	1,070	208	130	910	1,070	225	76	33	49
5	102	225	840	770	395	950	875	875	208	72	36	62
6	88	216	1,230	480	910	1,600	4,710	735	177	66	38	110
7	83	272	1,320	510	422	1,030	7,130	600	142	66	36	94
8	76	570	950	510	250	805	3,040	570	130	295	36	76
9	73	422	840	450	208	540	2,010	735	130	735	33	135
10	67	345	950	450	216	422	1,800	910	112	320	32	208
11	83	320	1,320	3,170	177	345	1,600	700	100	216	33	169
12	80	295	950	2,560	177	540	1,190	2,230	87	162	50	106
13	67	250	840	1,410	142	450	1,030	2,010	100	370	67	90
14	62	242	1,030	1,150	155	395	990	1,500	110	295	65	83
15	65	229	770	770	162	345	805	2,010	90	177	44	87
16	62	216	630	1,030	135	229	700	1,320	76	130	38	75
17	62	216	600	2,680	135	242	600	1,070	70	90	38	67
18	58	246	510	1,230	155	370	990	910	66	70	44	62
19	59	204	422	1,030	169	570	2,800	1,070	66	62	46	58
20	60	185	395	910	130	395	1,500	770	73	57	39	57
21	59	166	450	570	125	630	1,410	700	90	57	41	50
22	62	155	480	450	130	540	1,700	700	66	57	38	57
23	65	177	1,230	480	120	805	1,800	570	70	59	36	70
24	1,600	395	1,190	450	122	1,030	1,190	510	75	58	33	66
25	1,190	295	805	450	115	875	990	480	70	44	36	51
26	735	250	770	345	110	910	840	395	87	39	102	38
27	540	233	665	272	106	700	700	370	82	41	76	38
28	422	250	700	295	130	770	630	395	110	44	110	32
29	370	229	735	250	115	1,110	540	395	320	44	90	88
30	345	875	570	295	-------	1,900	510	395	200	41	62	11,500
31	422	-------	770	395	-------	1,320	-------	320	-------	43	49	-------

Monthly discharge of Tunkhannock Creek at Dixon, for the year ending Sept. 30, 1924.
(Drainage area 393 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	1,600	58	241	0.613	0.71
November	875	155	290	.738	.82
December	2,010	395	868	2.21	2.55
January	3,170	250	882	2.24	2.58
February	910	106	207	.527	.57
March	1,900	120	655	1.67	1.92
April	7,130	510	1,520	3.87	4.32
May	2,230	320	865	2.20	2.54
June	320	66	128	.326	.36
July	735	39	132	.336	.39
August	110	32	48.1	.122	.14
September	11,500	32	457	1.16	1.29
The Year	11,500	32	525	1.34	18.19

SUSQUEHANNA BASIN—STATION NO. 6

LACKAWANNA RIVER AT MOOSIC

Location.—At single-span steel highway bridge, River Street or Moosic Road, Moosic, Lackawanna County.

Drainage Area.—265 square miles.

Records Available.—August 8, 1913, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by Mrs. Margaret Ross.

Discharge Measurements.—Made from downstream side of bridge.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of culm and rocks. Control for low stages is at a slight riffle about 50 feet downstream from the gage; for medium and high stages at a pronounced riffle about 1,000 feet downstream; occasionally shifting.

Extremes of Discharge.—Maximum stage during the year, 8.49 feet observed at 6 p. m. September 30 (discharge about 9,600 second-feet); minimum, 1.78 feet at 5 p. m. August 10 (discharge, 76 second-feet).

Ice.—Stage-discharge relation rarely affected by ice.

Accuracy.—Ice effects considered negligible; stage-discharge relation probably permanent. Rating curve fairly well defined between 100 and 4,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results fair.

The following discharge measurement was made by H. J. McIntyre: No. 40, August 16: Gage height, 1.82 feet; discharge, 125 second-feet.

Daily Mean Gage Height, in feet, of Lackawanna River at Moosic, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.16	2.40	4.20	3.01	2.36	2.21	3.22	2.8[illegible]	2.54	2.10	2.00	1.88
2	2.14	2.31	3.66	2.78	2.31	2.14	3.09	2.82	2.49	2.11	1.88	2.02
3	2.13	2.31	3.20	3.02	2.27	2.13	3.06	2.66	2.47	2.05	1.81	1.95
4	2.10	2.27	2.97	3.00	2.26	2.41	2.90	2.88	2.41	2.03	1.89	1.90
5	2.07	2.19	2.99	2.95	-------	2.59	3.46	2.77	2.39	2.02	1.90	2.19
6	2.03	2.21	3.42	2.75	-------	2.55	5.08	2.67	2.37	1.89	1.89	2.08
7	2.00	2.40	3.40	2.63	-------	2.64	5.29	2.50	2.38	2.01	1.91	1.92
8	1.99	2.67	3.15	2.63	-------	2.63	4.41	2.55	2.32	2.90	1.86	1.87
9	2.00	2.54	3.06	2.62	-------	2.47	4.01	2.97	2.25	2.79	1.87	2.11
10	2.01	2.43	3.06	2.57	-------	2.40	3.87	3.02	2.22	2.42	1.79	2.02
11	2.00	2.42	3.23	4.15	-------	2.47	3.57	2.94	2.19	2.30	1.85	1.95
12	1.99	2.38	2.99	4.32	-------	2.40	3.25	4.29	2.18	2.20	2.36	1.89
13	2.00	2.40	2.93	3.70	-------	2.36	3.10	4.70	2.21	2.37	1.92	1.92
14	1.88	2.36	3.08	3.24	-------	2.35	3.13	4.02	2.17	2.26	1.89	1.87
15	1.87	2.35	2.84	2.95	-------	2.33	3.00	4.21	2.16	2.22	1.85	1.94
16	1.94	2.29	2.78	3.81	-------	2.28	2.93	3.90	2.14	2.16	1.84	1.88
17	1.92	2.29	2.74	4.10	-------	2.28	2.81	3.51	2.14	2.10	2.24	1.89
18	1.88	2.26	2.64	3.42	-------	2.29	3.01	3.56	2.09	2.07	1.87	1.86
19	1.95	2.26	2.60	3.20	-------	2.31	4.16	3.46	2.08	2.07	1.87	1.88
20	2.00	2.18	2.56	3.07	-------	2.33	-------	3.19	2.04	1.99	1.94	1.86
21	1.95	2.12	2.56	2.85	-------	2.51	-------	3.15	2.10	1.98	1.90	1.81
22	1.90	2.23	2.62	2.57	-------	2.42	-------	3.06	2.00	2.01	1.86	1.84
23	2.09	2.27	3.13	2.59	-------	2.56	-------	2.84	2.06	2.01	1.92	1.93
24	3.23	2.46	3.35	2.53	-------	2.91	-------	2.86	2.09	1.99	1.94	1.86
25	3.21	2.39	2.82	2.61	-------	3.01	-------	2.81	2.41	1.99	1.87	1.85
26	2.86	2.32	2.98	2.45	-------	3.07	-------	2.67	2.14	1.98	2.27	1.80
27	2.57	2.30	2.86	2.34	-------	2.93	-------	2.63	2.18	1.89	1.97	1.82
28	2.56	2.30	2.88	2.26	-------	2.8[illegible]	-------	2.62	2.08	1.93	1.85	1.81
29	2.36	2.30	2.82	2.26	-------	3.10	2.64	2.77	2.23	1.93	1.9[illegible]	2.70
30	2.44	3.15	2.73	2.44	-------	3.52	2.61	2.74	2.23	1.96	1.95	6.98
31	2.52	-------	2.78	2.45	-------	3.57	-------	2.62	-------	1.99	1.87	-------

Note.—Gage height Feb. 5-29 and Apr. 20-28 not observed.

Daily discharge, in second-feet, of Lackawanna River at Moosic for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	246	356	1,800	719	337	269	876	648	434	224	186	145
2	240	314	1,320	582	314	240	795	582	402	228	145	194
3	236	314	876	719	296	236	757	5[illegible]0	392	205	122	168
4	224	296	684	719	291	361	719	648	361	197	148	151
5	213	261	719	684	300	462	1,100	551	351	194	151	261
6	197	269	1,050	551	500	434	2,860	491	342	148	148	216
7	186	356	1,050	491	360	491	3,150	467	347	190	154	158
8	182	491	836	491	380	491	2,000	434	318	648	138	141
9	186	434	757	462	260	392	1,600	684	287	582	141	228
10	190	371	757	434	240	356	1,5[illegible]0	719	274	366	116	194
11	186	368	918	1,800	240	392	1,230	684	261	309	135	168
12	182	347	719	1,960	220	356	918	1,900	257	265	337	148
13	186	356	684	1,320	220	337	795	2,340	269	342	158	158
14	145	337	795	918	220	332	836	1,600	253	291	148	141
15	141	332	615	684	200	323	719	1,800	249	274	135	165
16	165	305	582	1,410	200	300	684	1,500	240	249	132	145
17	158	305	551	1,700	190	300	582	1,140	240	229	283	148
18	145	291	491	1,050	190	305	719	1,230	230	213	141	138
19	168	291	462	876	190	328	1,800	1,100	216	213	141	145
20	186	257	434	757	190	323	900	876	201	182	165	138
21	168	232	434	615	180	467	900	836	224	179	151	122
22	151	278	462	434	180	306	1,100	757	186	190	138	132
23	220	296	836	462	180	434	1,000	615	209	190	158	162
24	918	387	1,010	434	170	648	750	615	220	182	165	138
25	876	351	582	462	170	719	650	582	361	182	141	135
26	615	318	719	382	180	757	600	491	240	179	296	119
27	434	309	615	328	190	684	550	491	257	148	176	125
28	434	309	648	291	260	582	500	462	216	162	135	122
29	337	309	582	337	200	795	491	551	278	172	179	520
30	376	836	551	376	-------	1,140	462	551	278	172	168	6,180
31	407	-------	582	382	-------	1,230	-------	462	-------	182	141	-------

Note.—Discharge Feb. 5-29 and Apr. 20-28 estimated, because of no gage height record, from discharge of Tunkhannock Creek at Dixon and Wapwallopen Creek near Wapwallopen.

Monthly discharge of Lackawanna River at Moosic, for the year ending Sept. 30, 1924.
(Drainage area 265 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	918	141	281	1.06	1.22
November	836	232	342	1.29	1.44
December	1,800	434	746	2.82	3.25
January	1,900	291	735	2.77	3.19
February	500	170	242	.913	.98
March	1,230	236	477	1.80	2.08
April	3,150	462	1,050	3.96	4.42
May	2,340	407	847	3.20	3.69
June	434	186	279	1.05	1.17
July	648	148	242	.913	1.05
August	337	116	164	.619	.71
September	6,180	119	370	1.40	1.56
The Year	6,180	116	482	1.82	24.76

SUSQUEHANNA BASIN—STATION NO. 7

NORTH BRANCH SUSQUEHANNA RIVER AT WILKES-BARRE

Location.—At four-span steel highway bridge, Market Street, Wilkes-Barre, Luzerne County.

Drainage Area.—9,960 square miles.

Records Available.—November 1, 1890, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by Milton Wentz. Elevation of gage zero 511.03 feet, United States Geological Survey datum.

Discharge Measurements.—Made from upstream side of bridge, except during extremely high stages when they are taken from the Port Bowkley railroad bridge, where the entire discharge of the stream is confined to one channel without overflow.

Channel and Control.—Right bank is low and subject to overflow at a stage of about 18.5 feet; left bank subject to overflow only at extremely high stages. Bed is composed of culm, sand and gravel. Control for low stages is at a riffle about 4,000 feet downstream from the gage; occasionaly shifting. For high stages the control is probably the dam at Nanticoke, 9 miles downstream from the gage.

Extremes of Discharge.—Maximum stage during the year, 23.52 feet observed at 8 a. m. April 8 (discharge, 129,000 second-feet); minimum, 1.90 feet October 21 and 22 (discharge, 1,230 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation probably permanent except when affected by ice. Rating curve well defined between 1,300 and 160,000 second-feet. Gage read to hundredths once daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage height, computed from a continuous daily hydrograph, obtained by plotting daily gage readings, to rating table. Results good.

The following discharge measurement was made by J. M. Snavely: No. 63, August 13: Gage height, 2.78; discharge 2,410 second-feet.

Daily Mean Gage Height, in feet, of North Branch Susquehanna River at Wilkes-Barre, for the ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.94	3.71	6.50	7.00	5.36	2.91	12.34	6.84	5.00	4.89	2.38	3.20
2	2.83	3.70	7.58	7.81	5.08	3.01	10.60	7.23	5.16	4.30	2.35	2.98
3	2.74	3.70	7.82	8.19	4.80	3.10	9.04	7.68	4.85	3.80	2.32	2.72
4	2.66	3.61	7.09	7.76	4.02	3.21	8.51	7.72	4.71	3.60	2.30	2.57
5	2.51	3.53	6.49	7.54	4.71	3.52	10.18	7.61	4.43	3.45	2.44	2.53
6	2.39	3.42	6.74	7.55	5.23	6.10	13.88	8.38	4.38	3.34	2.50	2.70
7	2.35	3.38	8.49	6.81	5.97	10.10	20.84	7.88	4.65	3.17	2.50	2.78
8	2.31	3.60	8.89	5.66	6.09	7.94	22.99	7.26	4.74	3.52	2.42	2.70
9	2.26	3.83	8.46	5.59	5.77	7.26	19.20	7.12	5.11	4.35	2.35	2.72
10	2.18	4.11	7.66	5.90	5.10	6.43	15.63	9.43	4.77	4.75	2.40	2.80
11	2.14	4.30	7.56	7.30	4.29	5.75	13.05	10.41	4.50	4.78	2.46	2.90
12	2.11	4.21	7.67	12.62	4.14	5.47	11.43	10.60	4.37	4.25	2.58	2.98
13	2.10	4.00	7.45	14.76	3.97	5.05	10.56	15.44	4.18	4.03	2.62	3.54
14	2.06	3.83	7.07	12.60	3.90	4.78	9.82	15.16	4.04	3.85	2.70	3.48
15	2.04	3.78	6.84	10.28	3.77	4.68	9.48	12.99	3.92	3.70	2.60	3.38
16	1.99	3.73	6.71	8.88	3.38	4.57	9.61	12.13	3.80	3.65	2.50	3.30
17	1.98	3.60	6.29	11.60	3.28	4.42	8.94	11.09	3.72	3.55	2.50	3.24
18	1.97	3.54	5.85	12.96	3.11	4.20	8.76	9.95	3.63	3.25	2.52	3.15
19	1.95	3.48	5.64	10.55	3.03	4.02	11.11	9.32	3.51	3.10	2.50	3.09
20	1.92	3.44	5.38	9.05	2.98	4.89	14.40	9.33	3.44	2.95	2.42	3.02
21	1.90	3.34	5.12	7.90	2.84	5.12	13.81	8.68	3.50	3.05	2.40	2.84
22	1.90	3.28	5.08	6.70	2.71	5.25	12.53	8.04	3.50	3.22	2.32	2.76
23	2.01	3.23	5.67	5.84	2.65	5.73	12.01	7.52	4.02	3.10	2.32	2.64
24	3.18	3.20	7.54	5.57	2.74	8.07	11.56	7.05	4.09	3.00	2.30	2.53
25	6.21	3.28	8.17	4.79	2.87	10.26	10.68	6.64	4.02	2.80	2.38	2.40
26	6.61	3.23	7.90	4.79	3.15	10.23	9.52	6.30	4.22	2.79	3.39	2.40
27	5.83	3.32	7.30	6.62	2.98	9.64	8.63	6.11	4.22	2.73	4.95	2.36
28	4.96	3.46	6.81	5.84	3.08	8.77	7.88	5.97	4.41	2.70	4.45	2.42
29	4.44	3.52	6.36	5.76	3.00	8.90	7.25	5.78	4.38	2.65	4.20	2.70
30	4.09	3.80	6.14	6.16	-------	12.25	6.84	6.05	5.14	2.55	3.80	12.12
31	3.90	-------	6.14	6.37	-------	14.01	-------	5.92	-------	2.48	3.40	-------

Note.—Stage-discharge relation Jan. 5-7, Jan. 26 to Feb. 1 and Feb. 24 to Mar. 2 affected by ice.

Daily discharge, in second-feet, of North Branch Susquehanna River at Wilkes-Barre, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2,660	4,390	12,900	16,100	9,000	2,400	41,000	15,300	10,500	7,920	1,810	3,270
2	2,470	4,390	18,700	19,600	8,630	2,600	32,500	17,000	9,000	5,990	1,740	2,860
3	2,290	4,390	19,600	21,400	7,580	3,060	25,000	19,100	7,580	4,640	1,670	2,240
4	2,200	4,150	16,500	19,600	7,920	3,270	22,700	19,100	7,250	4,150	1,670	2,040
5	1,960	3,920	14,100	17,000	7,250	3,920	30,600	18,700	6,290	3,700	1,880	2,040
6	1,810	3,700	14,900	14,000	9,370	12,500	49,300	22,200	6,290	3,480	1,960	2,290
7	1,740	3,700	22,700	12,000	12,100	30,100	103,000	20,600	6,900	3,270	1,960	2,470
8	1,670	4,150	24,500	10,900	12,500	20,000	124,000	17,400	7,250	3,920	1,810	2,290
9	1,610	4,640	22,200	10,500	11,300	17,400	88,300	16,500	8,630	6,290	1,740	2,290
10	1,550	5,420	19,100	11,700	8,630	13,700	59,600	26,800	7,580	7,580	1,810	2,470
11	1,500	5,990	18,700	17,400	5,990	11,300	44,600	31,500	6,600	7,580	1,880	2,660
12	1,440	5,700	19,100	42,500	5,430	10,100	36,400	32,500	6,290	5,700	2,120	2,880
13	1,440	5,150	17,800	54,400	5,150	8,270	32,500	58,200	5,700	5,150	2,120	3,920
14	1,380	4,640	16,500	42,500	4,890	7,580	28,700	56,900	5,150	4,640	2,290	3,920
15	1,380	4,640	15,300	31,000	4,640	7,250	27,200	44,600	4,800	4,390	2,120	3,700
16	1,330	4,390	14,900	24,500	3,700	6,920	27,700	40,000	4,640	4,150	1,960	3,480
17	1,330	4,150	13,200	37,400	3,480	6,290	21,500	34,900	4,320	4,150	1,960	3,270
18	1,280	3,920	11,300	44,600	3,060	5,700	24,000	29,600	4,150	3,270	1,960	3,270
19	1,280	3,920	10,500	32,500	2,890	6,920	34,900	26,300	3,920	3,060	1,960	3,060
20	1,230	3,700	9,750	25,000	2,860	7,920	52,000	26,300	3,700	2,860	1,810	2,860
21	1,230	3,480	8,630	20,000	2,470	8,630	42,800	23,600	3,920	2,860	1,810	2,470
22	1,230	3,480	8,630	14,900	2,290	9,000	42,000	20,400	3,920	3,270	1,670	2,470
23	1,330	3,270	10,900	11,300	2,200	10,900	39,500	18,200	5,150	3,060	1,670	2,200
24	3,270	3,270	18,200	10,500	2,000	20,900	37,400	16,100	5,420	2,860	1,670	2,040
25	12,900	3,480	21,400	7,580	2,000	31,000	33,000	14,500	5,150	2,470	1,810	1,810
26	14,500	3,270	20,000	6,500	2,000	30,600	27,200	13,300	5,700	2,290	3,700	1,810
27	11,300	3,480	17,400	5,500	2,000	27,700	23,200	12,500	5,700	2,290	8,270	1,740
28	8,270	3,920	15,300	5,000	2,200	24,000	20,000	12,100	6,290	2,290	6,290	1,810
29	6,290	3,920	13,700	5,000	2,200	24,500	17,000	11,300	6,290	2,200	5,700	2,290
30	5,420	4,640	12,500	5,500	-------	40,500	15,300	12,100	8,630	2,040	4,640	40,000
31	4,890	-------	12,500	7,500	-------	49,900	-------	11,700	-------	1,960	3,700	-------

Note.—Discharge Jan. 5-7, Jan. 26 to Feb. 1 and Feb. 24 to Mar. 2 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for North Branch Susquehanna River at Towanda and Danville.

Monthly discharge of North Branch Susquehanna River at Wilkes-Barre, for the year ending Sept. 30, 1924.

(Drainage area 9,960 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	14,500	1,230	3,360	0.337	0.39
November	5,990	3,270	4,180	.420	.47
December	24,500	8,630	15,900	1.60	1.84
January	54,400	5,000	19,500	1.96	2.26
February	12,500	2,000	5,370	.539	.58
March	49,900	2,400	15,000	1.51	1.74
April	124,000	15,300	40,400	4.06	4.53
May	58,200	11,300	23,800	2.39	2.76
June	10,500	3,700	6,100	.612	.68
July	7,920	1,960	3,980	.400	.46
August	8,270	1,670	2,550	.256	.30
September	40,000	1,740	3,860	.388	.43
The Year	124,000	1,230	12,000	1.20	16.44

SUSQUEHANNA BASIN—STATION NO. 8

WAPWALLOPEN CREEK NEAR WAPWALLOPEN

Location.—At single-span steel highway bridge, known as Harts Bridge, three and one-half miles southeast of Wapwallopen, Luzerne County, and three and one-half miles upstream from mouth of creek.

Drainage Area.—46 square miles.

Records Available.—October 24, 1919, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by Calvin P. Readler.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Left bank is high and not subject to overflow; right is of medium height and becomes inundated during extremely high stages. Bed is composed of gravel and boulders. Control is at a riffle about 1,000 feet downstream from the gage, where bed is composed of a compact formation of coarse gravel and boulders; probably permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph 7.9 feet at 1 p. m. September 30 (discharge, about 2,240 second-feet); minimum, 0.84 foot at 6 a. m. September 27 (discharge, 5 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Regulation.—The operation of grist mills upstream from the station may cause variation in stage during low flows. There is very little storage at the mill dam one and one-half miles upstream from the gage; at the dam three and one-half miles upstream from the gage there is some storage and flow during part of day, at time of low water, can probably be stored.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve fairly well defined between 4 and 300 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for extremely high stages when they are fair.

Cooperation.—Station is maintained in cooperation with M. O. Leighton, Consulting Engineer, Washington, D. C.

The following discharge measurement was made by H. J. McIntyre: No. 16, August 12: Gage height, 2.29 feet; discharge, 144 second-feet.

Daily Mean Gage Height, in feet, of Wapwallopen Creek near Wapwallopen, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.00	1.29	2.04	2.18	1.82	1.57	2.16	1.96	1.74	1.37	1.16	0.98
2	.95	1.20	1.66	2.10	1.68	1.65	2.11	1.82	1.69	1.69	1.13	1.00
3	.95	1.18	1.61	2.08	1.53	1.73	2.13	1.70	1.70	1.62	1.12	1.14
4	.93	1.21	1.57	2.10	1.52	1.77	2.30	1.78	1.66	1.43	1.09	1.08
5	.91	1.24	1.51	2.05	1.50	2.56	2.40	1.67	1.60	1.46	1.06	1.11
6	.90	1.27	1.89	2.08	1.71	2.50	3.20	1.61	1.67	1.35	1.43	1.24
7	.93	1.84	1.85	2.08	1.65	2.28	3.30	1.58	1.67	1.36	1.28	1.11
8	.97	1.72	1.78	1.97	1.82	1.97	2.80	1.65	1.53	3.22	1.17	1.03
9	.94	1.42	1.77	1.91	1.81	1.75	2.42	1.98	1.64	4.57	1.10	1.01
10	.94	1.31	1.80	1.90	1.66	1.76	2.41	2.08	1.50	3.05	.99	1.01
11	1.01	1.34	1.83	3.57	1.60	1.78	2.18	2.06	1.43	2.51	.95	.99
12	.97	1.38	1.84	2.87	1.58	1.74	2.06	3.03	1.42	2.29	1.85	.95
13	.93	1.27	1.77	2.71	1.76	1.68	2.05	2.87	1.50	2.57	1.57	.91
14	.93	1.32	1.97	2.33	1.44	1.76	1.88	2.61	1.58	2.14	1.54	.92
15	.92	1.34	1.80	2.09	1.62	1.57	1.81	2.90	1.42	1.91	1.24	.93
16	.94	1.33	1.68	3.25	1.56	1.84	1.70	2.51	1.36	1.79	1.17	.94
17	.93	1.29	1.65	3.85	1.59	1.82	1.71	2.35	1.33	1.69	1.66	.89
18	.89	1.26	1.63	2.88	1.54	1.59	1.93	2.34	1.31	1.62	1.50	.93
19	.92	1.27	1.61	2.61	1.51	1.66	2.10	2.24	1.27	1.55	1.34	.93
20	.90	1.23	1.59	2.33	1.57	1.57	2.16	2.33	1.47	1.47	1.18	.94
21	.95	1.15	1.77	2.11	1.62	1.72	2.21	2.37	1.46	1.43	1.19	.96
22	.96	1.11	2.39	2.24	1.66	1.67	2.59	2.24	1.37	1.53	1.17	.97
23	1.22	1.17	2.88	2.84	1.62	1.76	2.27	2.08	1.30	1.69	1.13	.94
24	3.09	1.31	2.24	2.69	1.59	1.80	2.04	2.04	1.33	1.40	1.15	.99
25	3.27	1.27	1.96	2.60	1.68	1.88	1.99	2.02	1.27	1.33	1.12	.91
26	2.45	1.27	2.19	1.98	1.76	1.82	1.95	1.90	1.36	1.31	1.13	.91
27	1.60	1.25	2.11	-------	1.68	1.77	1.86	1.87	1.49	1.28	1.09	.87
28	1.49	1.16	2.14	2.17	1.65	1.72	1.83	1.90	1.48	1.25	1.02	.92
29	1.44	1.21	2.13	2.20	1.60	1.98	1.78	1.92	1.44	1.26	.96	1.09
30	1.41	1.68	1.94	2.16	-------	3.10	1.76	2.09	1.43	1.21	.97	5.61
31	1.36	-------	2.07	1.98	-------	2.51	-------	1.85	-------	1.20	.95	-------

Note.—Stage-discharge relation Dec. 27-31, Jan. 4-9, 22-30 and Feb. 8 to Mar. 6 affected by ice. Gage height Jan. 27 not observed.

Daily discharge, in second-feet, of Wapwallopen Creek near Wapwallopen, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8	23	102	122	73	30	115	90	64	30	16	8
2	7	18	56	108	58	32	108	73	59	59	14	8
3	7	17	51	108	44	40	115	60	60	52	14	15
4	7	19	47	95	43	60	136	69	56	35	12	12
5	6	20	42	90	41	85	151	57	50	37	11	13
6	6	22	82	85	61	120	300	51	57	28	35	20
7	7	76	77	75	55	136	325	48	57	29	23	13
8	7	62	69	75	46	91	221	55	44	300	16	10
9	7	34	68	75	40	66	151	93	54	705	12	9
10	7	25	71	83	38	67	151	108	41	270	8	9
11	9	27	75	400	36	69	122	102	35	167	7	8
12	7	30	76	230	34	64	102	260	34	136	77	7
13	7	22	68	209	32	58	102	230	41	176	47	6
14	7	26	91	144	32	67	81	184	48	115	45	6
15	6	27	71	108	30	47	72	210	34	84	20	7
16	7	26	58	309	30	76	60	176	29	70	16	7
17	7	23	55	450	30	73	61	144	26	59	56	6
18	6	22	53	240	28	49	87	144	25	52	41	7
19	6	22	51	184	28	56	108	129	22	46	27	7
20	6	20	49	144	28	47	115	144	38	38	17	7
21	7	15	68	108	28	62	122	144	37	35	17	7
22	7	13	151	100	26	57	167	129	30	44	16	7
23	19	16	240	90	26	67	129	108	18	59	14	7
24	260	25	129	85	24	71	102	102	26	32	15	8
25	325	22	90	80	24	81	94	95	22	26	14	6
26	159	22	122	75	24	73	89	83	29	25	14	6
27	50	21	85	70	24	68	78	79	40	23	12	5
28	40	16	85	70	28	62	75	83	30	22	9	6
29	36	19	75	75	28	93	69	85	36	22	7	12
30	33	58	80	90	-------	280	67	108	35	19	7	1,080
31	29	-------	85	93	-------	167	-------	77	-------	18	7	-------

Note.—Discharge Dec. 27-31, Jan. 4-9, 22-30 and Feb. 8 to Mar. 6 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Lackawanna River at Moosic, Nescopeck Creek near St. Johns and Fishing Creek at Bloomsburg.

Monthly discharge of Wapwallopen Creek near Wapwallopen, for the year ending Sept. 30, 1924.
(Drainage area 46 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	325	6	35.5	0.772	0.89
November	76	13	26.3	.572	.64
December	240	42	81.4	1.77	2.04
January	450	70	137	2.98	3.44
February	73	24	35.8	.778	.84
March	280	30	77.9	1.69	1.95
April	325	60	122	2.65	2.96
May	260	48	115	2.50	2.88
June	64	18	39.5	.859	.96
July	710	18	90.4	1.97	2.27
August	77	7	20.8	.452	.52
September	1,080	5	44.3	.963	1.07
The Year	1,080	5	69.1	1.50	20.46

SUSQUEHANNA BASIN—STATION NO. 9

NESCOPECK CREEK NEAR ST. JOHNS

Location.—At single-span steel highway bridge, the first above the Wilkes-Barre & Hazelton Railway bridge, near St. Johns, Luzerne County.

Drainage Area.—49 square miles.

Records Available.—July 13, 1916, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge, read by John Klinger. Elevation of gage zero 1,116.47 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of gravel and boulders. Control consists of boulders 50 feet downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 7.5 feet at 3 p. m. September 30 (discharge, about 2,240 second-feet); minimum, 0.96 foot at 7 a. m. August 4 (discharge, 5.2 second-feet).

Ice.—Stage-discharge relation seriously affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined below 100 second-feet and fairly well defined between 100 and 500 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for medium and high stages when they are fair.

The following discharge measurement was made by H. J. McIntyre: No. 25, August 12: Gage height, 2.21 feet; discharge, 120 second feet. Measurement made by wading 50 feet upstream from the gage.

Daily Mean Gage Height, in feet, of Nescopeck Creek near St. Johns, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.19	2.08	3.03	2.13	2.66	1.87	2.63	1.95	-------	-------	1.04	1.25
2	1.25	1.81	3.02	2.07	1.76	1.83	2.62	1.87	-------	-------	1.03	1.22
3	1.20	1.65	2.58	2.26	1.65	1.76	2.37	1.80	-------	-------	.98	1.21
4	1.18	1.54	2.10	2.28	1.73	1.69	2.44	1.68	-------	-------	1.01	1.24
5	1.14	1.49	2.04	2.22	2.16	1.77	2.47	1.60	-------	1.39	1.06	1.40
6	1.09	1.49	2.49	2.41	2.32	2.08	2.99	1.49	-------	1.52	1.12	1.46
7	1.06	1.61	2.88	2.87	1.90	2.23	3.90	1.43	-------	3.40	1.13	1.41
8	1.03	1.70	2.70	2.92	1.98	2.38	3.89	1.47	-------	3.48	1.08	1.34
9	1.07	1.87	2.15	2.82	2.00	2.18	2.98	1.72	-------	3.06	1.03	1.39
10	1.15	1.82	1.98	2.43	1.97	2.18	2.89	1.99	-------	2.31	1.01	1.58
11	1.09	1.70	1.93	3.28	2.00	2.26	2.81	2.57	-------	1.68	.97	1.56
12	1.06	1.62	1.85	3.99	1.92	2.20	2.57	2.67	-------	1.35	2.04	1.51
13	1.04	1.57	2.03	3.89	2.06	2.16	2.49	2.96	-------	1.69	1.93	1.47
14	1.04	1.53	2.13	3.71	2.02	2.12	2.44	3.30	-------	1.85	1.85	1.43
15	1.03	1.49	2.14	2.75	2.02	2.07	2.37	3.33	-------	1.58	1.77	1.44
16	1.02	1.44	2.04	3.06	2.06	2.02	2.28	3.24	-------	1.75	1.66	1.40
17	1.00	1.39	1.93	4.30	1.98	1.97	2.35	3.16	-------	1.58	1.45	1.36
18	1.12	1.32	1.88	3.86	1.98	1.91	2.39	3.20	-------	1.51	1.51	1.33
19	1.33	1.47	1.83	3.19	2.17	1.86	2.53	3.19	-------	1.48	1.54	1.30
20	1.30	1.42	1.78	2.72	2.50	1.79	2.55	3.11	-------	1.72	1.54	1.22
21	1.20	1.53	1.73	2.50	3.58	1.73	2.58	2.92	-------	1.57	1.49	1.21
22	1.09	1.47	2.14	2.21	3.60	1.90	2.59	2.83	-------	1.56	1.46	1.26
23	1.14	1.50	2.94	2.13	3.46	2.00	2.53	2.73	-------	1.92	1.43	1.21
24	3.23	1.54	3.11	2.50	3.39	2.05	2.47	2.68	-------	1.80	1.39	1.20
25	3.63	1.46	2.81	2.66	3.14	2.14	2.28	2.59	-------	1.60	1.37	1.17
26	2.70	1.51	2.75	2.55	2.92	2.27	2.19	2.46	-------	1.44	1.38	1.15
27	2.56	1.47	2.69	3.12	2.82	2.30	2.15	2.32	-------	1.28	1.36	1.17
28	2.48	1.42	2.62	3.09	1.95	2.22	2.13	-------	-------	1.22	1.31	1.20
29	2.40	1.40	2.56	2.95	1.89	2.40	2.09	-------	-------	1.18	1.31	1.95
30	2.35	1.90	2.41	2.83	-------	2.69	2.61	-------	-------	1.13	1.30	5.94
31	2.28	-------	2.17	2.75	-------	2.68	-------	-------	-------	1.10	1.28	-------

Note.—Stage-discharge relation Dec. 26 to Jan. 1, Jan. 6-9, Jan. 27 to Feb. 2 and Feb. 8 to Mar. 3 affected by ice. Gage height May 28 to July 4 not observed.

Daily discharge, in second-feet, of Nescopeck Creek near St. Johns, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11	97	283	90	30	32	203	74		22	6.7	12
2	12	53	283	89	30	34	192	62		42	6.5	12
3	11	36	192	123	36	36	142	52		36	5.6	11
4	10	27	97	132	44	39	161	38		22	6.1	12
5	9.1	24	89	114	106	48	161	31		18	7.1	19
6	7.8	24	171	110	132	97	283	24		25	8.6	22
7	7.1	32	259	95	66	123	535	20		387	8.8	20
8	6.5	40	214	90	50	151	535	22		415	7.6	16
9	7.4	62	106	90	48	114	283	42		308	6.5	18
10	9.4	55	78	161	44	114	259	80		132	6.1	30
11	7.8	40	70	360	40	123	236	182		38	5.4	28
12	7.1	33	59	570	38	114	182	203		16	89	25
13	6.7	29	89	535	38	106	171	271		39	70	22
14	6.7	26	106	475	36	97	161	360		59	59	20
15	6.5	24	106	225	36	89	142	360		30	48	21
									60			
16	6.3	21	89	308	34	81	132	334		46	36	19
17	6.0	18	70	675	32	76	142	334		30	22	17
18	8.6	15	63	535	30	68	151	334		27	25	16
19	16	22	56	334	30	60	182	334		23	27	14
20	14	20	50	214	28	51	182	308		42	27	12
21	11	26	44	171	28	44	192	259		29	24	11
22	7.8	22	106	114	28	66	192	248		28	22	13
23	9.1	24	271	106	28	81	182	225		69	20	11
24	334	27	308	171	28	89	161	214		52	18	11
25	445	22	248	203	28	106	132	192		31	18	10
26	214	25	190	182	28	123	114	161		21	18	9.4
27	182	22	150	130	30	132	106	132		13	17	10
28	171	20	130	75	30	114	106	160		12	14	11
29	151	19	110	60	30	151	97	170		10	14	74
30	142	66	95	50	-------	214	81	220		8.8	14	1360
31	132	-------	90	46	-------	214	-------	150	-------	8.1	13	-------

Note.—Discharge estimated Dec. 26 to Jan. 1, Jan. 6-9, Jan. 27 to Feb. 2 and Feb. 8 to Mar. 3, because of ice, from weather records, study of gage height graph and comparison with similar studies for Lackawanna River at Moosic, Wapwallopen Creek near Wapwallopen and Fishing Creek at Bloomsburg, and May 28 to July 4, because of no gage height record, from discharge of Wapwallopen Creek near Wapwallopen. Braced figures show mean discharge for period included.

Monthly discharge of Nescopeck Creek at St. Johns, for the year ending Sept. 30, 1924.
(Drainage area 49 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	445	6.0	63.7	1.30	1.50
November	97	15	32.4	.661	.74
December	308	44	138	2.82	3.25
January	675	46	214	4.37	5.04
February	132	28	40.9	.835	.90
March	214	32	96.4	1.97	2.27
April	535	81	193	3.94	4.40
May	360	20	181	3.69	4.25
June, Estimated	96	27	60	1.22	1.36
July	415	8.1	65.8	1.34	1.54
August	89	5.4	21.6	.441	.51
September	1,360	9.4	62.9	1.28	1.43
The Year	1,360	5.4	97.9	2.00	27.19

SUSQUEHANNA BASIN—STATION NO. 10

FISHING CREEK AT BLOOMSBURG

Location.—At single-span, wooden covered, highway bridge, known as Red Rock Bridge, Bloomsburg, Columbia County.

Drainage Area.—355 square miles.

Records Available.—January 27, 1914, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by L. Norman Cox. Elevation of gage zero 462.56 feet, United States Geological Survey datum.

Discharge Measurements.—Made from upstream side of bridge or by wading.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of sand and gravel. Control is at a riffle, where the bed is composed of gravel, about 700 feet downstream from the gage; practically permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 17.3 feet at 7 p. m. September 30 (discharge, about 23,000 second-feet); minimum, 1.80 feet at 6.35 a. m. October 23 (discharge, 18 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent. Rating curve well defined below 600 second-feet and fairly well defined between 600 and 2,200 second-feet. Gage read to hundredths twice daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for medium and high stages when they are fair.

The following discharge measurement was made by J. M. Snavely: No. 26, August 11: Gage height, 2.62 feet; discharge, 154 second-feet.

Daily Mean Gage Height, in feet, of Fishing Creek at Bloomsburg, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.75	3.34	5.54	4.90	3.69	-------	4.95	4.45	3.63	3.70	2.23	2.05
2	2.72	3.19	5.22	4.65	3.36	2.82	4.60	4.26	3.59	3.45	2.21	2.42
3	2.66	3.09	4.75	5.32	3.16	2.78	4.24	4.09	3.50	3.30	2.20	2.28
4	2.59	3.06	4.21	5.51	3.10	2.80	4.45	4.23	3.56	3.28	2.11	2.04
5	2.56	3.01	4.28	4.92	4.43	4.00	5.15	4.05	3.36	3.55	2.32	2.36
6	2.48	3.02	5.64	4.25	5.28	5.16	7.42	3.82	3.32	3.26	2.36	2.40
7	2.49	3.06	6.35	4.22	4.14	5.04	10.53	3.68	3.45	3.06	2.38	2.54
8	2.50	3.29	5.50	4.15	3.62	4.50	7.42	3.60	3.31	3.97	2.16	2.44
9	2.42	3.22	4.88	3.95	3.48	3.88	5.99	5.31	3.22	5.55	2.09	2.40
10	2.47	3.11	4.58	3.80	3.32	-------	5.33	6.02	3.11	4.67	2.05	2.46
11	2.43	3.09	4.68	6.75	3.25	-------	3.88	5.89	3.01	4.21	2.33	2.42
12	2.42	3.06	4.52	6.83	3.29	-------	4.59	7.09	2.95	3.83	3.15	2.25
13	2.36	2.96	4.40	5.79	3.08	-------	4.44	7.47	3.01	3.74	2.96	2.05
14	2.22	2.93	4.54	4.90	2.90	-------	4.31	6.12	3.25	3.65	2.74	2.25
15	2.16	2.90	4.53	4.45	3.08	-------	4.19	5.62	3.03	3.34	2.64	2.45
16	2.48	2.88	3.88	4.50	2.98	-------	4.01	4.97	2.90	3.22	2.25	2.50
17	2.38	2.85	3.60	6.83	2.95	-------	3.76	4.63	2.80	3.07	2.51	2.41
18	2.38	2.81	3.42	5.72	3.09	3.34	4.20	4.40	2.72	2.95	2.86	2.40
19	2.35	2.80	3.32	5.12	2.98	3.48	5.41	4.47	2.69	2.88	2.50	2.34
20	2.40	2.58	3.44	4.65	2.92	3.38	4.89	4.18	2.93	2.78	2.71	2.32
21	2.40	2.68	4.32	4.12	2.96	3.62	5.00	4.08	3.13	2.66	2.74	2.38
22	2.20	2.70	4.74	3.66	3.02	3.72	5.23	4.11	3.09	2.49	2.49	2.35
23	2.26	2.72	6.16	4.02	2.94	3.80	5.60	3.78	2.96	3.40	2.35	2.49
24	5.45	3.20	6.08	3.88	3.02	4.09	4.93	3.63	2.89	2.91	2.40	2.45
25	5.88	3.09	5.60	3.72	2.90	4.15	4.57	3.81	2.92	2.83	2.38	2.49
26	4.75	3.02	4.81	4.52	2.71	4.29	4.23	3.61	3.06	2.56	2.54	2.04
27	4.14	2.96	4.37	3.84	2.86	4.26	4.01	3.51	3.02	2.66	2.48	2.00
28	3.84	2.93	4.48	4.31	2.82	4.27	3.85	3.59	3.61	2.50	2.44	1.95
29	3.59	2.87	4.40	4.06	2.79	5.12	3.76	3.61	4.28	2.35	2.50	2.53
30	3.44	4.08	4.05	3.55	-------	6.32	3.79	4.03	4.14	2.36	2.20	13.20
31	3.49	-------	4.45	4.03	-------	5.59	-------	3.75	-------	2.35	2.18	-------

Note.—Gage height Mar. 1 not observed and Mar. 10-17 unsatisfactory.

Daily discharge, in second-feet, of Fishing Creek at Bloomsburg, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	162	330	3,080	1,510	590	180	1,600	1,130	560	530	64	42
2	155	306	1,780	1,250	390	180	1,250	970	530	440	61	94
3	141	266	1,420	1,880	294	170	970	860	470	360	60	72
4	126	254	930	2,080	270	175	1,130	970	500	350	49	41
5	120	234	1,010	1,510	1,130	790	1,780	825	390	500	77	84
6	104	238	2,180	970	1,880	1,780	4,470	650	370	340	84	90
7	106	254	3,110	930	895	1,600	10,000	590	440	254	87	116
8	108	355	2,080	895	530	1,170	4,470	530	365	755	55	97
9	94	320	1,510	755	458	720	2,630	1,880	320	2,180	47	90
10	103	274	1,250	650	370	300	1,880	3,370	274	1,330	40	101
11	95	266	1,330	3,630	325	220	720	2,510	234	930	79	94
12	94	254	1,170	3,630	355	200	1,250	4,970	215	685	282	67
13	84	218	1,090	2,400	262	190	1,130	4,620	234	620	218	42
14	63	209	1,170	1,510	200	190	1,010	2,750	335	560	160	67
15	55	200	1,170	1,130	262	200	930	2,180	242	380	137	99
16	104	195	720	1,170	224	240	790	1,600	200	320	67	108
17	87	188	530	3,630	215	300	620	1,250	175	258	110	92
18	87	178	422	2,200	266	380	930	1,090	155	215	160	90
19	82	175	370	1,690	224	458	1,980	1,130	148	195	108	80
20	90	124	434	1,250	206	400	1,510	930	209	170	152	77
21	90	146	1,010	860	218	530	1,600	860	282	141	160	87
22	60	150	1,330	560	238	590	1,780	870	266	106	106	82
23	68	155	2,870	790	212	650	2,180	650	218	410	82	106
24	1,980	310	2,750	720	238	860	1,510	560	198	202	90	99
25	2,510	266	2,180	590	200	895	1,250	650	206	190	87	106
26	1,420	238	1,420	1,170	152	1,010	979	530	254	120	116	41
27	895	218	1,050	685	190	970	790	470	238	141	104	37
28	685	209	1,170	1,010	180	970	685	530	530	108	97	32
29	530	192	1,090	825	172	1,690	620	530	1,010	82	74	114
30	434	260	825	500	-------	2,990	650	825	895	84	60	15,500
31	464	-------	1,130	825	-------	2,180	-------	620	-------	82	58	-------

Note.—Discharge estimated Mar. 1, because of no gage height record, and Mar. 10-17, because of unsatisfactory gage height record, from weather records, study of gage height graph and discharge of Towanda Creek near Monroeton, Wapwallopen Creek near Wapwallopen, Pine Creek at Cedar Run and Lycoming Creek near Trout Run.

Monthly discharge of Fishing Creek at Bloomsburg, for the year ending Sept. 30, 1924.
(Drainage area 355 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	2,510	55	361	1.02	1.18
November	866	124	254	.716	.80
December	3,110	370	1,370	3.86	4.45
January	3,630	500	1,400	3.94	4.54
February	1,880	152	385	1.08	1.16
March	2,990	170	748	2.11	2.43
April	10,000	620	1,770	4.99	5.57
May	4,920	470	1,350	3.80	4.38
June	1,010	148	349	.983	1.10
July	2,180	82	423	1.19	1.37
August	282	40	102	.287	.33
September	15,500	32	595	1.68	1.87
The Year	15,500	32	761	2.14	29.18

SUSQUEHANNA BASIN—STATION NO. 11

NORTH BRANCH SUSQUEHANNA RIVER AT DANVILLE

Location.—At seven-span steel highway bridge between South Danville and Danville, Montour County.

Drainage Area.—11,200 square miles.

Records Available.—March 25, 1899, to December 31, 1903, and March 23, 1905, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by E. F. Bell. Elevation of gage zero 430.47 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge.

Channel and Control.—Left bank is high and not subject to overflow; right bank subject to overflow at extremely high stages. Bed is composed of gravel and rock. Control is at a riffle a short distance downstream from the gage; practically permanent.

Extremes of Discharge.—Maximum stage during the year, 18.8 feet observed from 12.30 p. m. to 6 p. m. April 8 (discharge, 142,000 second-feet); minimum, 2.1 feet from 7 a. m. October 20 to 3 p. m. October 23 (discharge, 1,600 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined bewteen 800 and 150,000 second-feet. Gage read to tenths twice daily: during high stages more frequently. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

The following discharge measurement was made by H. J. McIntyre: No. 68, August 11: Gage height, 2.48 feet; discharge, 2,360 second-feet.

Daily Mean Gage Height, in feet, of North Branch Susquehanna River at Danville, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.8	3.5	4.8	5.45	4.5	3.95	11.1	5.7	4.85	4.7	2.5	3.1
2	2.7	3.4	5.95	6.1	4.35	4.0	9.45	5.8	4.65	4.4	2.5	-------
3	2.7	3.3	6.6	7.25	4.25	4.0	8.1	6.05	4.35	4.05	2.4	-------
4	2.6	3.3	6.4	7.05	4.4	4.1	7.25	6.45	4.75	3.55	2.4	-------
5	2.5	3.3	5.8	6.75	4.45	4.75	7.55	6.25	4.05	3.65	2.4	-------
6	2.5	3.25	5.6	7.35	5.0	4.3	10.45	6.3	3.85	3.4	2.4	-------
7	2.4	3.2	6.8	6.7	4.65	7.5	15.7	6.6	3.8	3.3	2.5	-------
8	2.4	3.25	7.7	6.35	4.85	7.3	18.5	6.25	3.95	3.6	2.5	2.7
9	2.4	3.3	7.6	5.45	5.0	6.55	16.9	6.05	4.15	5.25	2.45	2.7
10	2.3	3.45	6.85	5.1	4.65	6.0	13.7	7.35	4.3	4.75	2.4	2.8
11	2.2	3.6	6.5	6.0	4.15	5.35	11.35	8.8	4.05	4.8	2.4	2.8
12	2.2	3.7	6.6	9.4	3.85	5.05	9.95	9.65	3.9	4.35	2.8	2.8
13	2.2	3.6	6.6	12.75	3.75	4.75	8.95	12.35	3.8	4.0	3.0	2.8
14	2.2	3.5	6.35	11.85	3.6	4.5	8.3	13.4	3.75	3.8	2.75	3.25
15	2.2	3.4	5.95	9.65	3.5	4.3	7.9	11.6	3.55	3.65	2.65	3.2
16	2.2	3.3	5.8	8.0	3.2	4.05	7.65	10.5	3.4	3.5	2.6	3.1
17	2.2	3.3	5.55	9.45	3.0	3.95	7.55	9.8	3.35	3.5	2.55	3.0
18	2.2	3.2	5.25	10.95	3.0	3.85	7.2	8.8	3.3	3.3	2.7	2.9
19	2.2	3.1	4.9	10.1	3.1	3.8	7.8	8.1	3.2	3.2	2.55	2.9
20	2.1	3.1	4.65	8.25	3.9	4.1	11.55	7.7	3.25	3.05	2.5	2.85
21	2.1	3.1	4.5	7.2	4.5	4.25	11.25	7.65	3.3	3.0	2.4	2.7
22	2.1	3.0	4.55	6.4	4.5	4.5	10.65	7.1	3.25	3.1	2.4	2.7
23	2.1	3.0	5.6	5.85	4.5	4.7	10.15	6.5	3.3	3.35	2.4	2.6
24	3.05	3.0	6.45	4.8	4.25	5.45	9.8	6.15	3.55	3.05	2.4	2.6
25	4.9	3.0	7.35	4.25	4.2	7.3	9.25	5.35	3.7	2.9	2.4	2.5
26	5.6	3.2	7.3	4.15	4.2	8.35	8.4	5.45	3.8	2.8	2.4	2.5
27	5.55	3.1	6.5	3.95	4.1	8.15	7.5	5.2	3.8	2.7	2.65	2.4
28	4.9	3.1	5.95	3.65	4.1	7.6	6.85	5.2	3.85	2.65	3.65	2.4
29	4.4	3.1	5.75	3.35	3.75	7.35	6.25	5.05	4.55	2.6	3.8	2.45
30	3.9	3.3	5.4	3.7	-------	8.95	5.9	5.0	5.25	2.6	3.6	8.8
31	3.65	-------	5.4	4.3	-------	11.7	-------	5.1	-------	2.6	3.25	-------

Note.—Stage-discharge relation Jan. 6-10, 26-28 and Feb. 18 to Mar. 6 affected by ice. Gage height Sept. 2-7 not observed.

Daily discharge, in second-feet, of North Branch Susquehanna River at Danville, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3,370	5,770	11,600	14,600	10,200	2,600	55,400	16,100	11,600	11,200	2,530	4,300
2	3,080	5,380	17,800	18,300	9,730	2,600	40,800	16,700	10,700	9,730	2,530	3,800
3	3,080	5,000	21,200	24,900	8,780	3,000	31,000	17,800	9,730	7,870	2,270	3,000
4	2,800	5,000	20,000	23,600	9,730	3,400	24,900	20,000	11,600	6,170	2,270	2,800
5	2,530	5,000	16,700	22,400	9,730	4,600	27,500	18,900	7,870	6,170	2,270	2,800
6	2,530	4,640	15,600	18,000	12,600	8,000	49,200	19,400	7,000	5,380	2,270	3,000
7	2,270	4,640	22,400	14,000	10,700	26,900	10,300	21,200	7,000	5,000	2,530	3,400
8	2,270	4,640	28,200	12,000	11,600	25,500	138,000	18,900	7,870	6,170	2,530	3,400
9	2,270	5,000	27,500	12,000	12,600	21,200	118,000	17,800	8,780	13,600	2,400	3,080
10	2,030	5,380	22,400	13,000	10,700	17,800	80,900	26,200	9,250	11,600	2,270	3,370
11	1,810	6,170	20,600	17,800	8,780	14,600	58,100	36,100	7,870	11,600	2,270	3,370
12	1,810	6,580	21,200	40,800	7,000	12,600	45,800	42,500	7,430	9,730	3,370	3,370
13	1,810	6,170	21,200	71,500	7,000	11,600	37,700	67,700	7,000	7,870	3,980	3,370
14	1,810	5,770	20,000	61,700	6,170	10,200	32,500	77,700	7,000	7,000	3,220	4,640
15	1,810	5,380	17,800	42,500	5,770	9,250	29,600	59,900	6,170	6,170	2,940	4,640
16	1,810	5,000	16,700	30,300	4,640	7,870	27,500	50,100	5,380	5,770	2,800	4,300
17	1,810	5,000	15,600	40,800	3,980	7,870	27,500	44,100	5,380	5,770	2,660	3,980
18	1,810	4,640	13,600	54,500	3,600	7,000	24,900	36,100	5,000	5,000	3,080	3,670
19	1,810	4,300	12,100	46,600	3,400	7,000	28,900	31,000	4,610	4,640	2,660	3,670
20	1,600	4,300	10,700	31,700	3,000	8,320	59,900	28,200	4,640	3,980	2,530	3,520
21	1,600	4,300	10,200	24,900	3,000	8,780	56,300	27,500	5,000	3,980	2,270	3,080
22	1,600	3,980	10,700	20,000	2,800	10,200	51,000	21,200	4,640	4,300	2,270	3,080
23	1,600	3,980	15,600	16,700	2,600	11,200	47,500	20,600	5,000	6,170	2,270	2,800
24	3,980	3,980	20,000	11,600	2,600	14,600	44,100	18,900	6,170	3,980	2,270	2,800
25	12,100	3,980	26,200	8,780	2,600	25,500	39,200	16,700	6,580	3,670	2,270	2,530
26	15,600	4,640	25,500	7,500	2,600	33,200	33,200	14,600	7,000	3,370	2,270	2,530
27	15,600	4,300	20,600	6,000	2,600	31,700	26,900	13,600	7,000	3,980	2,940	2,270
28	12,100	4,300	17,800	5,500	2,600	27,500	22,400	13,600	7,000	2,940	6,170	2,270
29	9,730	4,300	16,700	5,380	2,600	26,200	18,900	12,600	10,700	2,800	7,000	2,400
30	7,430	5,000	14,600	6,580	-------	37,700	17,200	12,600	13,600	2,800	6,170	36,100
31	6,170	-------	14,600	9,250	-------	60,800	-------	13,100	-------	2,800	4,640	-------

Note.—Discharge estimated Jan. 6-10, 26-28 and Feb. 18 to Mar. 6, because of ice, from weather records, study of gage height graph and comparison with similar studies for North Branch Susquehanna River at Wilkes-Barre, and Sept. 2-7, because of no gage height record from discharge at the same station.

Monthly discharge of North Branch Susquehanna River at Danville, for the year ending Sept. 30, 1924.

(Drainage area 11,200 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	15,000	1,600	4,250	0.379	0.44
November	6,580	3,980	4,880	.436	.49
December	28,200	10,200	18,200	1.62	1.87
January	71,500	5,380	23,760	2.12	2.44
February	12,600	2,600	6,330	.565	.61
March	60,800	2,600	16,100	1.44	1.66
April	138,000	17,200	46,600	4.16	4.64
May	77,700	12,000	27,600	2.46	2.84
June	13,600	4,640	7,490	.669	.75
July	13,600	2,800	6,140	.548	.63
August	7,000	2,270	3,030	.271	.31
September	36,100	2,270	4,370	.390	.44
The Year	138,000	1,600	14,100	1.26	17.12

SUSQUEHANNA BASIN—STATION NO. 12

WEST BRANCH SUSQUEHANNA RIVER AT BOWER

Location.—At single-span steel highway bridge, about four miles northeast of Mahaffey, near railroad station at Bower, Clearfield County.

Drainage Area.—320 square miles.

Records Avaialable.—October 2, 1913, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by Leslie G. Bell. Elevation of gage zero, 1,207.22 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Right bank is low and subject to overflow at extremely high stages; left is high and not subject to overflow. Bed is composed of gravel. Control is at a riffle about 200 feet downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 13.4 feet at 8 p. m. June 29 (discharge, about 10,200 second-feet); minimum 4.00 feet from 7 a. m. October 7 to 7 a. m. October 10 (discharge, 46 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined between 20 and 4,000 second-feet. Gage read to quarter tenths twice daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for high stages when they are fair.

The following discharge measurement was made by H. J. McIntyre: No. 31, May 23: Gage height, 6.30 feet; discharge, 788 second-feet.

Daily Mean Gage Height, in feet, of West Branch Susquehanna River at Bower, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.26	4.11	7.57	8.24	6.45	5.45	7.59	6.55	6.10	7.40	5.45	4.72
2	4.24	4.09	6.67	7.57	6.37	5.47	6.84	6.31	5.85	6.00	5.20	4.68
3	4.21	4.06	6.49	9.48	6.27	5.57	6.56	6.11	5.72	6.12	5.02	4.85
4	4.18	4.13	6.42	9.81	6.09	5.63	6.50	6.04	5.55	6.15	4.85	4.55
5	4.15	4.19	7.15	8.91	6.90	7.53	6.49	6.03	5.32	6.18	4.72	4.40
6	4.10	4.85	8.87	7.61	6.87	7.97	8.87	5.95	5.30	6.05	4.70	4.48
7	4.00	4.77	8.85	6.48	6.05	6.95	8.59	5.78	5.35	7.62	4.65	4.50
8	4.00	4.62	7.84	6.36	5.80	6.55	7.34	6.20	5.40	7.65	4.58	4.75
9	4.00	4.49	8.09	6.18	5.67	6.30	7.22	7.65	5.58	7.25	4.40	5.50
10	4.01	4.43	8.37	5.91	5.60	5.97	6.84	7.30	5.28	6.60	4.35	5.55
11	4.02	4.42	8.07	7.73	5.53	5.90	6.39	6.88	5.05	6.15	4.30	5.35
12	4.04	4.42	7.19	6.96	5.43	5.73	6.26	9.08	5.08	5.90	4.35	5.18
13	4.04	4.39	6.57	6.54	5.37	5.57	6.09	8.33	5.15	8.02	4.74	5.08
14	4.05	4.37	6.45	6.08	5.27	5.49	6.02	7.88	5.08	7.00	4.28	4.90
15	4.05	4.41	6.17	5.84	5.17	5.45	5.86	7.58	5.02	6.32	4.22	4.70
16	4.05	4.42	5.81	7.41	5.11	5.36	5.69	7.03	4.92	5.92	4.20	4.62
17	4.04	4.37	5.68	8.75	5.19	5.34	5.54	6.68	4.85	5.65	4.20	4.52
18	4.04	4.36	5.54	7.14	5.25	5.35	5.96	6.55	4.72	5.42	4.20	4.42
19	4.07	4.27	5.48	6.76	5.43	5.40	6.04	6.41	4.65	5.20	4.37	4.42
20	4.10	4.26	5.38	5.86	5.63	5.45	5.99	6.43	4.45	5.02	5.92	4.48
21	4.10	4.22	7.14	5.11	5.73	5.72	6.06	6.58	4.25	4.92	5.25	4.45
22	4.08	4.17	9.08	6.41	5.70	5.79	5.96	6.45	4.12	4.82	4.60	4.95
23	4.05	4.32	9.74	6.96	5.63	6.54	5.86	6.19	4.22	4.72	6.25	5.30
24	4.10	4.69	9.21	6.66	5.55	6.92	5.66	6.22	4.35	4.65	6.32	5.18
25	4.18	4.67	8.26	6.34	5.45	7.56	5.56	6.18	4.85	4.58	7.61	4.98
26	4.22	4.87	6.91	6.24	5.35	7.49	5.46	6.02	5.65	4.52	6.93	4.95
27	4.15	4.92	6.63	6.09	5.41	7.06	5.39	5.88	5.55	4.42	5.72	4.88
28	4.11	4.85	8.61	5.98	5.50	8.38	5.39	5.95	5.18	4.38	5.32	4.85
29	4.11	4.85	7.08	5.88	5.51	10.63	5.52	6.02	11.24	4.31	4.95	5.87
30	4.14	7.70	7.04	6.41	-------	10.99	5.58	6.00	10.80	4.35	4.82	8.79
31	4.16	-------	8.88	6.54	-------	8.79	-------	6.08	-------	4.62	4.78	-------

Note.—Stage-discharge relation Jan. 22 to Feb. 3 and Feb. 17 to Mar. 3 affected by ice.

Daily discharge, in second-feet, of West Branch Susquehanna River at Bower, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	56	2,060	2,760	460	260	2,060	1,090	730	1,840	378	145
2	71	54	1,180	2,060	420	300	1,260	865	580	1,090	280	145
3	66	51	1,010	4,460	400	360	1,090	730	495	730	220	178
4	63	58	935	4,880	730	470	1,010	700	422	762	178	118
5	60	64	1,640	3,650	1,360	1,950	1,010	700	315	795	145	95
6	55	178	3,650	2,060	1,360	2,520	3,650	640	315	700	145	107
7	46	155	3,520	1,010	760	1,450	3,260	550	335	2,050	135	110
8	46	125	2,280	900	550	1,090	1,740	795	353	2,060	125	155
9	46	108	2,640	795	470	865	1,640	2,060	445	1,640	95	400
10	47	100	3,000	610	445	640	1,260	1,740	315	1,090	88	422
11	48	98	2,640	2,170	422	610	935	1,360	235	762	80	335
12	50	98	1,640	1,450	578	522	830	3,910	250	610	88	280
13	50	94	1,090	1,010	335	422	730	2,880	265	2,520	86	270
14	50	90	972	730	298	400	670	2,400	250	1,450	77	190
15	50	96	762	580	265	378	580	2,060	220	865	68	145
16	50	98	550	1,840	250	335	495	1,450	190	670	65	125
17	50	90	495	3,520	240	335	422	1,180	178	470	65	110
18	50	89	400	1,540	220	335	640	1,090	145	355	65	98
19	52	76	400	1,260	200	355	700	935	135	280	90	98
20	55	74	355	580	200	378	670	972	102	220	610	107
21	55	68	1,540	250	190	495	700	1,090	72	190	298	102
22	53	62	3,910	260	190	550	640	972	57	165	125	205
23	50	83	4,740	360	190	1,010	580	795	68	145	830	315
24	55	145	4,040	420	190	1,360	470	795	88	135	865	280
25	63	135	2,880	380	190	2,060	422	795	178	125	2,070	220
26	68	178	1,360	380	190	1,950	378	670	470	110	1,360	205
27	60	190	1,090	380	220	2,170	355	610	422	98	495	190
28	56	178	3,260	380	260	3,000	355	640	280	92	315	178
29	56	178	1,540	380	260	6,060	400	670	6,850	82	205	580
30	59	2,170	1,450	460	-------	6,560	445	670	6,360	72	165	3,520
31	61	-------	3,650	440	-------	3,520	-------	730	-------	125	165	-------

Note.—Discharge Jan. 22 to Feb. 3 and Feb. 17 to Mar. 3 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for West Branch Susquehanna River at Clearfield, Clearfield Creek at Dimeling and Little Juniata River at Tyrone.

Monthly discharge of West Branch Susquehanna River at Bower, for the year ending Sept. 30, 1924.
(Drainage area 320 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	74	46	55.3	0.173	0.20
November	2,170	51	175	.547	.61
December	4,740	355	1,960	6.12	7.06
January	4,880	250	1,350	4.22	4.86
February	1,360	190	399	1.25	1.35
March	6,560	260	1,380	4.31	4.97
April	3,650	355	980	3.06	3.41
May	3,910	550	1,180	3.69	4.25
June	6,850	57	704	2.20	2.46
July	2,520	72	718	2.24	2.58
August	2,060	65	321	1.00	1.15
September	3,520	95	314	.981	1.09
The Year	6,850	46	799	2.50	33.99

SUSQUEHANNA BASIN—STATION NO. 13

CLEARFIELD CREEK AT DIMELING

Location.—At single-span steel highway bridge, Dimeling, Clearfield County, about 400 feet downstream from the mouth of Little Clearfield Creek.

Drainage Area.—370 square miles.

Records Available.—October 2, 1913, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by John Olson. Elevation of gage zero, 1,145.56 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Left bank is high and not subject to overflow; right is low and is overflowed at extremely high stages. Bed at control riffle, about 250 feet downstream from the gage, is composed of coarse gravel and boulders; probably permanent.

Extremes of Discharge.—Maximum stage during the year, 12.62 feet observed at 7.30 p. m. August 25 (discharge, 11,200 second-feet); minimum, 3.35 feet at 4 p. m. October 6 (discharge, 20 second-feet).

Ice.—Stage-discharge relation seriously affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined below 11,000 second-feet. Gage read to hundredths twice daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for intermediate stages when they are fair.

The following discharge measurement was made by J. M. Snavely: No. 32, May 22: Gage height, 6.73 feet; discharge, 1,460 second-feet.

Daily Mean Gage Height, in feet, of Clearfield Creek at Dimeling, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.52	3.66	-------	8.44	8.09	6.29	7.62	6.25	5.44	7.82	4.22	4.48
2	3.57	3.69	-------	7.32	7.36	6.41	6.94	6.50	5.26	6.55	4.62	4.42
3	3.61	3.64	5.42	8.87	7.40	6.45	6.48	5.92	5.12	5.93	4.19	4.83
4	3.54	3.64	5.16	9.23	7.22	6.52	6.42	6.04	4.97	5.61	3.98	4.65
5	3.46	3.72	5.78	7.60	8.01	7.92	6.55	5.86	4.92	5.46	4.28	4.38
6	3.36	3.93	6.96	6.19	8.51	7.40	8.48	5.65	4.95	6.00	4.48	4.48
7	3.41	4.10	7.88	5.64	6.65	7.10	8.75	5.40	5.00	6.28	4.70	4.52
8	3.46	4.14	7.05	5.84	5.32	6.31	7.65	5.72	5.02	6.29	4.23	4.78
9	3.49	4.24	6.94	5.68	5.10	5.85	7.07	8.28	5.32	6.36	4.12	4.52
10	3.55	4.15	7.48	5.58	5.16	5.66	7.04	7.80	4.96	5.94	3.98	4.86
11	3.58	4.00	7.33	6.68	4.82	5.58	6.64	7.34	4.78	5.56	3.92	4.73
12	3.56	3.81	6.92	7.12	5.08	5.48	6.15	10.20	4.88	5.31	4.04	4.53
13	3.49	3.84	6.44	5.98	4.80	5.36	5.96	10.60	5.26	7.42	4.10	4.44
14	3.42	3.81	6.08	5.66	4.82	5.22	5.82	8.42	5.84	6.86	4.10	4.30
15	3.52	3.77	5.58	5.22	4.75	5.05	5.61	7.92	5.20	5.88	3.94	4.14
16	3.66	3.76	5.30	5.43	5.48	4.90	5.48	7.08	4.99	5.48	3.87	4.06
17	3.68	3.82	5.30	8.62	6.30	4.82	5.32	6.50	4.88	5.20	4.30	4.04
18	3.71	3.98	5.25	7.37	7.12	5.05	5.50	6.36	4.74	4.94	4.74	3.94
19	3.66	3.92	5.00	6.52	6.65	5.06	5.95	6.82	4.74	4.56	4.50	3.88
20	3.68	3.88	4.84	6.20	6.75	5.08	5.63	6.49	4.60	4.23	4.37	3.98
21	3.58	3.84	4.96	5.44	6.64	5.36	5.65	6.57	4.61	4.42	5.07	4.08
22	3.51	3.76	6.50	7.59	6.58	5.50	5.75	6.85	4.46	4.44	4.74	4.33
23	3.50	3.82	9.38	8.48	6.66	6.31	5.72	6.32	4.40	4.50	5.39	4.98
24	3.60	3.92	8.59	8.37	6.60	6.54	5.56	6.13	4.41	4.35	5.47	4.69
25	3.68	4.18	7.42	8.14	6.42	7.59	5.39	6.14	4.37	4.26	8.28	4.29
26	3.78	4.14	6.76	7.68	6.38	7.28	5.33	5.80	4.96	4.19	8.64	4.14
27	3.72	4.09	6.21	7.42	6.31	6.79	5.21	5.58	4.72	4.14	6.46	4.08
28	3.69	4.09	7.76	7.36	6.18	7.81	5.09	5.61	4.82	3.96	5.56	4.05
29	3.66	4.20	8.60	7.38	6.38	10.01	5.28	5.60	9.85	3.91	5.26	4.30
30	3.57	-------	7.28	7.66	-------	11.10	5.23	5.76	10.27	3.99	4.90	7.90
31	3.62	-------	8.00	8.31	-------	9.23	-------	5.69	-------	4.13	4.65	-------

Note.—Gage height Nov. 30 to Dec. 2 unsatisfactory. Stage-discharge relation Jan. 22 to Feb. 6 and Feb. 16 to Mar. 5 affected by ice.

Daily discharge, in second-feet, of Clearfield Creek at Dimeling, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	56	850	3,300	650	360	2,320	1,040	592	2,560	150	220
2	44	60	700	2,000	550	440	1,600	1,260	492	1,340	250	195
3	49	53	565	4,000	480	500	1,260	850	430	882	150	338
4	41	53	450	4,440	440	650	1,180	915	372	675	105	268
5	32	64	790	2,320	750	1,300	1,340	820	355	592	172	195
6	21	96	1,700	1,040	1,200	2,100	3,440	702	372	915	270	220
7	26	129	2,680	702	915	1,800	3,860	565	390	1,120	285	220
8	32	140	1,700	820	515	1,120	2,320	730	390	1,120	161	172
9	35	161	1,600	730	430	820	1,800	3,180	515	1,180	129	220
10	42	140	2,220	675	450	702	1,700	2,560	372	882	105	338
11	46	109	2,000	1,420	320	675	1,340	2,600	330	648	95	302
12	43	77	1,600	1,800	430	620	1,040	6,360	355	540	119	225
13	35	81	1,180	915	355	540	882	6,940	492	2,100	129	203
14	27	77	980	702	320	470	790	3,300	870	1,600	129	172
15	38	71	675	470	302	410	702	2,680	515	850	98	140
16	56	69	515	592	260	355	620	1,800	390	620	86	119
17	58	78	515	3,580	240	320	515	1,260	355	470	172	119
18	62	105	492	2,100	240	410	620	1,180	302	372	302	98
19	56	95	390	1,260	220	410	882	1,520	302	235	220	88
20	58	88	338	1,040	220	430	702	1,260	250	172	184	105
21	46	81	372	592	220	540	702	1,340	250	195	410	129
22	37	69	1,260	380	220	620	760	1,520	208	208	302	184
23	36	78	4,760	660	220	1,120	730	1,120	195	270	565	390
24	48	95	3,580	600	220	1,260	648	980	208	184	592	285
25	58	150	2,100	550	220	2,320	565	980	184	161	3,180	172
26	72	140	1,520	440	240	2,000	540	790	372	150	3,580	140
27	64	129	1,040	380	280	1,520	470	675	285	140	1,260	129
28	60	129	2,560	380	320	2,560	430	675	320	102	648	119
29	56	150	3,580	440	340	5,800	515	675	5,440	93	492	172
30	44	1,900	2,000	550	-------	7,960	492	760	6,360	107	355	2,080
31	51	-------	2,800	650	-------	4,440	-------	730	-------	140	268	-------

Note.—Discharge estimated Nov. 30 to Dec. 2, because of unsatisfactory gage height record, and Jan. 22 to Feb. 6 and Feb. 16 to Mar. 5, because of ice, from weather records, study of gage height graph and comparison with similar studies for West Branch Susquehanna River at Bower, Frankstown Branch Juniata River at Williamsburg and Little Juniata River at Tyrone

Monthly discharge of Clearfield Creek at Dimeling, for the year ending Sept. 30, 1924.
(Drainage area 370 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	72	21	45.5	0.123	0.14
November	1,900	53	157	.424	.47
December	4,760	338	1,530	4.14	4.77
January	4,440	380	1,270	3.43	3.95
February	1,200	220	399	1.08	1.16
March	7,960	320	1,440	3.89	4.48
April	3,860	430	1,160	3.14	3.50
May	6,940	565	1,650	4.46	5.14
June	6,360	184	740	2.00	2.23
July	2,560	93	664	1.79	2.06
August	3,580	86	481	1.30	1.50
September	2,680	88	279	.754	.84
The Year	7,960	21	823	2.22	30.24

SUSQUEHANNA BASIN—STATION NO. 14

DRIFTWOOD BRANCH SINNEMAHONING CREEK AT STERLING RUN

Location.—At three-span steel highway bridge, Sterling Run, Cameron County, about 300 feet upstream from mouth of Sterling Run.

Drainage Area.—270 square miles.

Records Available.—September 30, 1913, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by C. U. Lupro. Elevation of gage zero 894.60 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Both banks are low and subject to overflow during extremely high stages. Bed is composed of gravel. The control for low stages is at the first of a series of gravel riffles extending from 50 to 100 feet downstream from the gage; probably permanent. The control for medium and high stages, which was at the first of a series of riffles extending from 300 to 500 feet downstream from the gage, was changed on November 2, 1921, when a portion of the gravel bar, deposited by flow from Sterling Run on September 10, 1921, was washed away.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 5.7 feet at 6 p. m. April 6 (discharge, 7,650 second-feet); minimum, 0.56 foot from 3 p. m. October 18 to 3 p. m. October 19 (discharge, 22 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve fairly well defined between 20 and 10,000 second-feet. Gage read to hundredths twice daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage height to rating table. Results fair.

Discharge measurements of Driftwood Branch Sinnemahoning Creek at Sterling Run, during the year ending Sept. 30, 1924.

No.	Date	Made by	Gage height	Discharge
			Feet	Sec.-ft.
46	May 24	H. J. McIntyre	1.80	573
47	24	J. M. Snavely	1.82	536

Daily Mean Gage Height, in feet, of Driftwood Branch Sinnemahoning Creek at Sterling Run, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.61	0.70	2.30	3.78	1.51	1.52	2.66	2.26	1.69	1.81	0.84	0.60
2	.60	.70	1.82	3.10	1.53	1.44	2.28	2.40	1.70	1.58	.80	.59
3	.60	.68	1.55	3.45	1.38	1.48	2.14	2.36	1.58	1.44	.76	.84
4	.60	.66	1.37	3.42	1.31	1.46	2.02	2.42	1.62	1.34	.74	.72
5	.60	.66	1.72	2.81	1.47	1.96	2.18	2.33	1.52	1.54	.75	.67
6	.60	.69	2.48	2.34	2.01	2.23	4.18	2.18	1.53	1.31	.80	.71
7	.60	.71	3.17	2.23	1.70	1.90	4.79	1.97	1.50	1.58	.74	.73
8	.59	.72	2.40	2.05	1.69	1.82	3.43	1.95	1.40	2.74	.72	.69
9	.58	.76	2.16	1.84	1.56	1.65	2.76	2.80	1.45	3.02	.72	.80
10	.58	.73	2.20	1.66	1.50	1.56	2.45	3.22	1.34	2.84	.70	1.15
11	.58	.68	2.22	2.52	1.44	1.54	2.24	2.90	1.31	2.29	.69	.94
12	.58	.67	2.08	3.06	1.40	1.50	2.12	3.46	1.32	1.98	.70	.77
13	.58	.66	2.00	2.62	1.35	1.46	1.99	3.72	1.21	2.80	.70	.70
14	.57	.65	1.95	2.32	1.25	1.42	1.90	3.06	1.20	2.58	.68	.73
15	.57	.65	1.70	2.01	1.41	1.46	1.86	2.68	1.20	2.26	.68	.71
16	.57	.64	1.66	2.18	1.42	1.40	1.81	2.58	1.19	1.96	.66	.69
17	.57	.68	1.56	3.31	1.42	1.40	1.75	2.14	1.12	1.78	.67	.66
18	.56	.68	1.50	2.84	1.39	1.38	1.94	2.10	1.08	1.56	.70	.61
19	.56	.69	1.41	2.42	1.30	1.40	2.84	2.48	1.04	1.41	.67	.64
20	.58	.69	1.38	2.08	1.29	1.40	2.66	2.36	1.00	1.30	.67	.62
21	.60	.68	1.37	1.85	1.30	1.45	2.42	2.21	1.02	1.20	.70	.64
22	.60	.66	1.64	1.55	1.30	1.50	2.52	2.02	1.05	1.12	.70	.74
23	.60	.68	2.72	1.61	1.31	1.60	2.58	1.84	1.00	1.13	.70	1.08
24	.62	.76	2.92	1.58	1.28	1.96	2.42	1.69	1.02	1.04	.71	.83
25	.69	.88	2.61	1.46	1.23	1.99	2.26	1.70	1.14	.98	.90	.74
26	.72	.84	2.30	1.35	1.28	2.00	2.01	1.64	1.52	.96	.72	.71
27	.70	.99	2.00	1.33	1.38	1.96	1.82	1.57	1.29	.92	.68	.68
28	.68	1.04	2.10	1.41	1.41	2.14	1.72	1.69	1.38	.83	.67	.66
29	.68	.96	2.08	1.44	1.47	2.85	1.83	1.66	2.46	.83	.72	.90
30	.68	2.10	2.02	1.51	-------	3.72	1.83	1.76	2.02	.80	.67	3.35
31	.68	-------	2.43	1.64	-------	3.10	-------	1.69	-------	.82	.60	-------

Note.—Stage-discharge relation Jan. 23-25 and Feb. 15 to Mar. 4 affected by ice.

Daily discharge, in second-feet, of Driftwood Branch Sinnemahoning Creek at Sterling Run, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	24	29	1,040	3,600	307	120	1,540	980	442	530	48	23
2	23	29	548	2,290	321	120	1,040	1,170	450	356	41	23
3	23	28	335	2,840	235	130	865	1,100	356	267	36	48
4	23	27	230	2,840	200	150	710	1,170	386	215	34	31
5	23	27	466	1,770	284	647	920	1,100	314	328	35	27
6	23	28	1,310	1,100	710	980	4,400	920	321	200	41	30
7	23	30	2,470	980	450	670	5,660	683	300	356	34	33
8	23	31	1,170	760	370	548	2,840	665	245	1,690	31	28
9	22	26	865	566	349	410	1,690	1,770	272	3,220	31	41
10	22	33	920	418	300	342	1,240	2,470	215	1,860	29	132
11	22	28	920	1,310	267	328	980	1,940	200	1,040	28	68
12	22	27	810	2,290	245	300	810	3,030	205	692	29	37
13	22	27	710	1,460	220	278	701	3,410	154	1,770	29	29
14	22	26	665	1,040	172	256	670	2,290	150	1,460	28	33
15	22	26	450	701	140	278	584	1,610	150	980	28	30
16	22	25	418	920	120	245	539	1,460	146	674	27	28
17	22	28	342	2,650	120	245	490	865	122	514	28	27
18	22	28	300	1,860	190	225	656	810	109	342	29	25
19	22	28	250	1,170	120	245	1,800	1,310	96	250	27	25
20	22	28	235	810	120	245	1,540	1,100	83	195	27	24
21	23	28	230	575	120	272	1,170	920	89	150	29	25
22	23	27	402	335	120	300	1,310	710	99	122	29	34
23	23	28	1,610	280	120	370	1,460	566	83	126	29	109
24	24	36	1,940	240	120	674	1,170	442	89	96	30	46
25	28	56	1,460	220	120	701	980	450	129	78	58	34
26	31	48	1,040	290	110	710	710	402	314	73	31	30
27	29	80	710	210	110	674	548	349	190	63	28	28
28	28	96	810	250	110	865	466	442	235	51	27	27
29	28	73	810	267	110	1,860	557	418	1,240	46	31	58
30	28	810	710	307	-------	3,410	557	498	710	41	27	2,810
31	28	-------	1,240	402	-------	2,290	-------	442	-------	44	23	-------

Note.—Discharge Jan. 23-25 and Feb. 15 to Mar. 4 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Pine Creek at Cedar Run and Allegheny River at Red House.

Monthly discharge of Driftwood Branch Sinnemahoning Creek at Sterling Run, for the year ending Sept. 30, 1924.

(Drainage area 270 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	41	22	23.9	0.089	0.10
November	810	25	61.7	.229	.26
December	2,470	230	820	3.04	3.50
January	3,600	210	1,120	4.15	4.78
February	710	110	214	.793	.86
March	3,410	120	608	2.25	2.59
April	5,660	466	1,290	4.78	5.33
May	3,410	349	1,140	4.22	4.86
June	1,240	83	263	.974	1.09
July	3,220	41	575	2.13	2.46
August	58	23	31.7	.117	.13
September	2,840	23	132	.489	.55
The Year	5,660	22	526	1.95	26.51

SUSQUEHANNA BASIN—STATION NO. 15

WEST BRANCH SUSQUEHANNA RIVER AT RENOVO

Location.—At three-span steel highway bridge, Eighth Street, Renovo, Clinton County.

Drainage Area.—2,990 square miles.

Records Available.—July 1, 1895, to December 31, 1903, and October 1, 1905, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by J. H. Baird. Elevation of gage zero 634.03 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of rocks. Control is at the first of a series of riffles about 1,000 feet downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 13.0 feet at 1 a. m. April 7 (discharge, 65,000 second-feet); minimum, —0.76 foot at 5 p. m. October 23 (discharge, 169 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined between 200 and 2,000 second-feet and fairly well defined from 2,000 to 75,000 second-feet. Gage read to hundredths twice daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for medium and high stages when they are fair.

The following discharge measurement was made by J. M. Snavely: No. 49, May 25: Gage height, 3.52 feet; discharge 6,800 second-feet.

Daily Mean Gage Height, in feet, of West Branch Susquehanna River at Renovo, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	—0.43	—0.42	4.46	8.45	2.36	2.46	7.21	3.84	3.11	6.98	0.52	0.36
2	— .47	— .43	3.97	7.55	2.22	2.42	5.43	5.03	2.96	4.97	.54	.27
3	— .51	— .44	2.87	6.81	2.02	2.31	4.60	4.77	2.80	4.03	.82	.38
4	— .51	— .44	2.42	8.60	1.82	2.12	4.43	4.82	2.61	3.43	.64	.43
5	— .60	— .38	2.20	6.69	2.35	3.03	4.82	4.58	2.41	3.25	.44	.39
6	— .62	— .37	3.07	5.32	4.68	5.01	7.99	4.39	2.22	3.08	.43	.32
7	— .65	— .11	6.05	4.27	3.57	4.41	11.17	3.85	2.13	2.82	.34	.17
8	— .69	— .06	5.47	3.52	2.86	3.95	8.42	3.57	2.08	5.32	.50	.11
9	— .65	— .13	4.69	3.32	2.52	3.26	6.70	5.44	2.16	6.45	.38	.26
10	— .62	— .14	5.07	3.07	2.32	2.93	5.95	7.43	2.22	5.38	.22	.93
11	— .65	— .16	5.35	4.07	2.12	2.83	5.55	6.93	2.05	4.35	.11	1.07
12	— .69	— .17	4.83	6.21	2.01	2.67	4.61	8.06	1.96	3.57	.12	.86
13	— .70	— .19	4.28	5.32	1.89	2.28	4.29	10.42	1.96	5.15	.25	.55
14	— .68	— .21	3.87	4.25	1.62	2.20	4.01	8.24	2.48	5.95	.23	.37
15	— .66	— .24	3.42	3.55	1.53	2.21	3.65	6.96	2.82	4.72	.13	.25
16	— .68	— .27	3.09	4.02	1.56	2.06	3.39	6.11	2.51	3.85	.03	.17
17	— .68	— .31	2.74	7.06	1.61	1.93	3.15	5.11	2.24	3.24	.00	.09
18	— .70	— .35	2.46	6.81	1.51	1.84	3.14	4.59	1.90	2.73	.06	.02
19	— .70	— .39	2.24	5.93	1.43	1.88	4.71	4.48	1.74	2.32	.08	.00
20	— .70	— .41	2.08	4.79	1.22	1.97	4.80	4.38	1.62	2.00	.06	.12
21	— .72	— .44	1.98	3.85	1.07	2.01	4.52	4.04	1.55	1.74	.04	.24
22	— .74	— .46	2.46	2.88	1.07	2.37	4.31	3.92	1.48	1.53	.01	.38
23	— .76	— .43	5.50	2.61	1.37	2.74	4.38	3.76	1.42	1.46	.62	.55
24	— .67	— .32	7.15	2.54	2.51	3.90	4.13	3.42	1.20	1.28	.76	.83
25	— .53	— .33	6.05	2.37	3.06	4.67	3.92	3.56	1.59	1.13	2.30	.84
26	— .43	— .19	5.05	1.81	2.97	4.66	3.61	3.34	3.09	1.02	4.39	.45
27	— .40	— .03	4.39	1.16	2.81	4.47	3.15	3.05	2.72	.82	3.06	.24
28	— .42	.02	4.32	1.66	2.46	4.73	2.87	2.97	2.49	.67	1.92	.11
29	— .45	.07	5.53	2.16	2.46	6.82	2.94	3.00	6.30	.61	1.31	.39
30	— .50	.87	4.87	2.31	-------	9.61	3.14	3.10	9.31	.46	.84	3.72
31	— .42	-------	5.18	2.26	-------	8.69	-------	3.31	-------	.51	.59	-------

Note.—Stage-discharge relation Jan. 28-31, Feb. 16-20 and Feb. 23 to Mar. 6 affected by ice.

Daily discharge, in second-feet of West Branch Susquehanna River at Renovo, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	315	320	10,600	31,100	4,120	1,700	23,800	8,050	5,930	22,600	1,110	950
2	295	315	8,750	26,200	3,710	1,700	14,200	12,600	5,650	12,600	1,160	850
3	275	310	5,370	21,400	3,320	1,900	11,000	11,800	5,100	8,750	1,460	1,000
4	275	310	4,120	32,500	2,950	2,000	10,200	11,800	4,500	6,800	1,280	1,060
5	295	342	3,710	20,800	4,120	3,200	11,800	11,000	4,120	6,220	1,060	1,000
6	282	348	5,930	13,800	11,400	9,000	28,600	10,200	3,710	5,930	1,060	900
7	270	523	17,100	9,800	7,400	10,200	50,700	8,400	3,510	5,100	950	750
8	194	562	14,600	7,100	5,370	8,750	31,100	7,400	3,510	13,800	1,100	700
9	210	509	11,400	6,510	4,350	6,510	20,800	14,200	3,710	19,100	1,000	850
10	222	502	13,000	5,930	3,910	5,370	17,100	25,000	3,710	14,200	800	1,600
11	210	488	14,200	9,100	3,510	5,100	15,100	22,000	3,320	10,200	700	1,800
12	194	481	11,800	18,100	3,320	4,840	11,000	20,200	3,320	7,400	750	1,720
13	190	467	9,800	13,800	3,130	3,910	9,800	45,100	3,320	13,400	850	1,100
14	198	453	8,400	9,450	2,620	3,710	8,750	29,800	4,350	17,100	850	950
15	206	432	6,800	7,400	2,460	3,710	7,400	22,600	5,100	11,400	750	850
16	198	411	5,930	8,750	2,400	3,510	6,800	17,600	4,350	8,050	655	750
17	198	384	4,840	23,200	2,200	3,130	6,220	13,000	3,710	6,220	610	700
18	190	360	4,350	21,400	2,000	2,950	5,930	11,000	3,150	4,840	655	610
19	190	336	3,710	16,600	2,000	3,130	11,400	10,600	2,780	3,910	700	670
20	190	325	3,510	11,800	1,900	3,320	11,800	10,200	2,620	3,320	655	700
21	183	310	3,320	8,050	1,860	3,320	10,600	8,750	2,620	2,780	655	850
22	176	300	4,350	5,370	1,860	4,120	9,800	8,400	2,460	2,460	610	1,000
23	169	315	14,600	4,590	1,700	4,840	10,200	8,050	2,300	2,460	1,220	1,100
24	202	378	23,800	4,350	1,700	8,400	9,100	6,800	2,150	2,150	1,400	1,520
25	235	372	17,100	4,120	1,700	11,400	8,400	7,400	2,150	1,860	3,910	1,500
26	315	467	12,600	2,950	1,700	11,400	7,400	6,510	5,900	1,720	10,000	1,060
27	330	586	10,200	2,000	1,700	10,600	6,220	5,650	4,840	1,460	5 930	800
28	320	610	9,800	1,900	1,700	11,400	5,370	5,650	4,350	1,280	3,130	700
29	305	655	14,600	1,900	1,700	21,400	5,370	5,650	18,600	1,220	2,150	1,000
30	280	1,520	12,200	2,400	-------	39,500	5,930	5,930	37,400	1,060	1,520	7,700
31	320	-------	13,400	3,400	-------	33,200	-------	6,510	-------	1,110	1,220	-------

Note.—Discharge Jan. 28-31, Feb. 16-20 and Feb. 23 to Mar. 6 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for West Branch Susquehanna River at Bower and Williamsport.

Monthly discharge of West Branch Susquehanna River at Renovo, for the year ending Sept. 30, 1924.
(Drainage area 2,990 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	330	169	235	0.079	0.09
November	1,520	300	456	.153	.17
December	23,800	3,320	9,800	3.28	3.78
January	32,500	1,900	11,500	3.85	4.44
February	11,400	1,700	3,170	1.06	1.14
March	39,500	1,700	7,970	2.67	3.08
April	50,700	5,370	13,100	4.38	4.89
May	45,100	5,650	13,100	4.38	5.05
June	37,400	2,150	5,410	1.81	2.02
July	22,600	1,060	7,110	2.38	2.74
August	10,200	610	1,620	.542	.62
September	7,700	610	1,230	.411	.46
The Year	50,700	169	6,250	2.09	28.48

SUSQUEHANNA BASIN—STATION NO. 16

BALD EAGLE CREEK AT MILESBURG

Location.—At two-span Pennsylvania Railroad bridge, Milesburg, Centre County, about 1,000 feet upstream from mouth of Spring Creek.

Drainage Area.—140 square miles.

Records Available.—February 6, 1911, to September 30, 1924.

Gage.—Staff fastened to downstream end of bridge pier; read by P. H. Haupt.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Right bank is high, steep and rocky; left is low and subject to overflow at extremely high stages. Control is at a riffle about 100 feet upstream from the mouth of Spring Creek, where the bed is composed of gravel and boulders; probably permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 7.7 feet at 9 p. m. April 6 (discharge, about 9,150 second-feet); minimum, 0.10 foot from 4 p. m. September 27 to 4 p. m. September 28 (discharge, 15 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined below 2,000 second-feet. Gage read to quarter tenths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for high stages when they are fair.

The following discharge measurement was made by H. J. McIntyre: No. 33, May 28: Gage height, 1.12 feet; discharge, 191 second-feet.

Daily Mean Gage Height, in feet, of Bald Eagle Creek at Milesburg, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.38	0.46	2.00	2.10	1.92	1.42	2.35	2.57	1.02	1.60	0.46	0.32
2	.40	.44	1.12	2.15	1.90	1.50	1.98	1.75	.98	1.28	.38	.30
3	.40	.35	1.02	3.92	1.98	1.56	2.06	1.50	1.00	1.17	.32	.34
4	.40	.30	.95	3.52	2.15	1.68	2.35	1.96	.98	1.88	.30	.30
5	.40	.42	1.36	2.96	2.90	3.16	2.44	1.69	.88	1.25	.35	.34
6	.40	.45	2.50	2.58	2.42	2.55	6.24	1.50	.98	1.04	.44	.38
7	.40	.52	2.05	2.06	2.05	2.34	5.08	1.38	.95	1.35	.42	.38
8	.38	.62	1.25	1.58	1.85	2.08	3.20	1.78	1.11	3.69	.32	.34
9	.34	.58	1.75	1.10	1.42	1.75	2.46	3.97	1.25	3.32	.30	.30
10	.30	.52	1.90	.92	1.15	1.62	2.08	3.40	1.01	2.42	.30	.30
11	.30	.45	1.94	3.32	1.02	1.52	1.85	4.14	.84	1.78	.30	.30
12	.30	.56	1.85	2.87	1.00	1.45	1.72	5.73	1.42	1.42	.28	.30
13	.30	.52	1.65	2.00	1.00	1.38	1.58	4.14	2.99	1.81	.32	.38
14	.30	.48	1.45	1.75	.96	1.32	1.48	3.82	2.48	1.48	.26	.42
15	.52	.42	1.32	1.58	.92	1.26	1.35	3.60	1.92	1.36	.20	.36
16	.45	.42	1.22	3.57	.95	1.22	1.22	2.65	1.58	1.20	.20	.32
17	.40	.45	1.11	3.24	1.18	1.16	1.12	1.85	1.30	1.04	.34	.30
18	.36	.42	.96	2.42	1.10	1.15	1.40	1.68	1.14	.89	.30	.26
19	.32	.40	.82	1.92	1.06	1.06	1.52	1.65	.99	.78	.30	.22
20	.36	.40	.76	1.80	1.05	.98	1.52	1.86	.88	.68	.78	.16
21	.32	.40	.68	1.76	1.02	1.15	1.72	2.22	.85	.58	.68	.15
22	.30	.40	2.50	1.72	.92	1.65	1.70	1.90	.82	.50	.58	.22
23	.30	.60	4.02	1.68	.85	1.94	1.58	1.72	.76	.50	.62	.20
24	.60	.72	3.18	1.64	.82	2.08	1.48	1.75	.72	.48	.52	.18
25	.58	.66	2.32	1.95	.85	2.18	1.40	1.46	.74	.44	.58	.16
26	.48	.65	1.90	2.02	1.01	2.28	1.32	1.19	.74	.38	.48	.15
27	.42	.62	1.70	1.96	1.15	2.39	1.25	1.15	.68	.34	.66	.12
28	.38	.66	2.52	1.92	1.22	2.75	1.18	1.26	.66	.32	.58	.15
29	.38	.65	2.26	1.91	1.26	4.08	1.62	1.28	4.38	.30	.48	2.15
30	.58	2.73	1.95	2.22	-------	3.58	1.86	1.22	2.47	.32	.44	3.74
31	.52	-------	2.56	2.08	-------	2.85	-------	1.12	-------	.44	.38	-------

Note.—Stage-discharge relation Jan. 26 to Feb. 5, Feb. 16-23 and Feb. 26 to Mar. 5 affected by ice.

Daily discharge, in second-feet, of Bald Eagle Creek at Milesburg, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	34	41	375	420	140	100	552	670	106	226	41	30
2	36	40	121	445	140	110	375	272	103	155	34	28
3	36	32	106	2,130	150	120	398	198	106	129	30	31
4	36	28	99	1,590	160	150	552	352	103	330	28	28
5	36	38	165	965	480	300	610	255	89	146	32	31
6	36	40	640	700	580	670	6,250	198	103	114	40	34
7	36	47	398	398	398	552	4,070	175	99	165	38	34
8	34	57	146	226	310	420	1,220	290	121	1,850	30	31
9	31	53	272	121	175	272	610	2,200	146	1,340	28	28
10	28	47	330	95	129	226	420	1,460	106	580	28	28
11	28	40	352	1,340	106	198	310	2,430	84	290	28	28
12	28	51	310	880	106	186	255	5,210	175	175	31	28
13	28	47	240	375	106	175	226	2,430	1,010	290	30	34
14	28	43	186	272	100	155	198	1,990	640	198	25	38
15	47	38	155	226	95	146	165	1,720	330	165	21	33
16	40	38	137	1,650	85	137	137	735	226	137	21	30
17	36	40	121	1,280	85	129	121	310	155	114	31	28
18	33	38	100	580	80	129	175	255	129	91	28	25
19	30	36	82	330	80	114	198	240	105	77	28	22
20	36	36	74	290	80	103	198	310	89	65	77	19
21	30	36	65	272	80	129	255	470	85	53	65	18
22	28	36	640	255	80	240	255	330	82	45	53	22
23	28	55	2,280	255	80	352	226	255	74	45	57	21
24	55	69	1,220	240	82	420	198	272	69	43	47	20
25	53	62	525	352	85	470	175	186	72	40	53	19
26	43	61	330	240	85	525	155	137	72	34	43	18
27	38	57	255	160	90	580	146	129	65	31	62	16
28	34	62	640	140	100	805	137	146	62	30	53	18
29	34	61	498	150	100	2,430	236	155	2,900	28	43	445
30	53	805	352	190	-------	1,720	310	137	610	30	40	1,920
31	47	-------	670	160	-------	880	-------	121	-------	40	34	-------

Note.—Discharge Jan. 26. to Feb. 5, Feb. 16-23 and Feb. 26 to Mar. 5 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Bald Eagle Creek at Beech Creek Station, Frankstown Branch Juniata River at Williamsburg and Little Juniata River at Tyrone.

Monthly discharge of Bald Eagle Creek at Milesburg, for the year ending Sept. 30, 1924.
(Drainage area 140 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	55	28	36.0	0.257	0.30
November	805	28	71.1	.508	.57
December	2,280	65	383	2.74	3.16
January	2,130	95	540	3.86	4.45
February	580	80	151	1.08	1.16
March	2,430	100	418	2.99	3.45
April	6,250	121	637	4.55	5.08
May	5,210	121	775	5.54	6.39
June	2,900	62	271	1.94	2.16
July	1,850	28	228	1.63	1.88
August	77	21	38.8	.277	.32
September	1,920	16	104	.743	.83
The Year	6,250	16	305	2.18	29.75

SUSQUEHANNA BASIN—STATION NO. 17

BALD EAGLE CREEK AT BEECH CREEK STATION

Location.—At three-span steel highway bridge, Beech Creek Station, Pennsylvania Railroad, Clinton County.

Drainage Area.—565 square miles.

Records Available.—June 24, 1910, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by G. A. Rodgers and D. A. Barlett.

Discharge Measurements.—Made from downstream side of bridge.

Channel and Control.—Right bank is high and not subject to overflow; left bank subject to overflow at extremely high stages. Bed is composed of gravel and rocks. Control is at a riffle, about 1,000 feet downstream from the gage, where there is a pronounced fall; practically permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 11.0 feet at midnight April 6-7 (discharge, about 18,500 second-feet); minimum, 1.50 feet at 4 p. m. October 12 (discharge, 123 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation probably permanent except when affected by ice. Rating curve well defined below 800 second-feet and fairly well defined between 800 and 10,000 second-feet. Gage read to hundredths twice daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

The following discharge measurement was made by J. M. Snavely: No. 42, May 28: Gage height, 2.88 feet; discharge, 1,090 second-feet.

Daily Mean Gage Height, in feet, of Bald Eagle at Beech Creek Station, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.60	1.60	2.95	3.96	2.48	2.10	4.92	3.59	2.70	4.05	1.95	1.76
2	1.60	1.58	2.52	3.65	2.48	2.12	3.85	3.56	2.70	3.46	1.94	1.74
3	1.59	1.57	2.34	4.80	2.38	2.18	3.55	3.39	2.66	3.16	-------	1.73
4	1.58	1.56	2.24	4.82	2.35	2.24	3.85	3.59	2.60	3.56	1.94	1.72
5	1.57	1.64	2.54	4.12	3.00	3.75	3.95	3.31	2.52	3.02	1.94	1.71
6	1.57	1.70	3.14	3.48	3.00	3.81	7.25	3.16	2.51	2.78	1.94	1.71
7	1.56	1.76	3.56	3.64	2.86	3.57	8.59	3.12	2.50	2.82	1.92	1.70
8	1.56	1.74	3.07	3.06	2.66	3.02	5.64	3.29	2.50	3.73	1.92	1.70
9	1.55	1.70	2.93	2.82	2.45	2.72	4.63	5.75	2.59	4.20	1.92	1.70
10	1.54	1.68	3.14	2.70	2.48	-------	4.23	5.51	2.44	3.36	1.91	1.70
11	1.52	1.66	3.10	4.35	2.37	-------	3.69	5.07	2.40	2.70	1.91	1.70
12	1.50	1.63	3.00	3.97	2.38	-------	3.49	7.69	2.50	2.91	1.90	1.70
13	1.56	1.60	2.90	3.56	2.20	-------	3.34	7.09	3.15	3.37	1.88	1.70
14	1.56	1.59	2.80	3.28	2.22	-------	3.17	5.34	3.69	3.00	1.88	1.70
15	1.57	1.58	2.54	2.96	2.22	-------	3.04	4.67	-------	2.74	1.88	1.70
16	1.56	1.56	2.45	3.93	1.96	-------	2.97	4.17	3.18	2.64	1.86	1.70
17	1.56	1.60	2.38	5.95	2.00	-------	2.87	3.73	2.94	2.52	1.85	1.70
18	1.54	1.60	2.30	4.24	2.00	-------	3.09	3.49	2.78	2.42	1.85	1.70
19	1.54	1.59	2.24	3.77	2.00	-------	3.53	3.55	2.66	2.34	1.85	1.70
20	1.60	1.58	2.18	3.56	-------	-------	3.45	3.37	2.55	-------	1.85	1.70
21	1.59	1.56	2.16	2.94	3.09	-------	3.43	3.47	2.46	-------	1.85	1.70
22	1.60	1.56	3.11	3.08	2.42	-------	3.47	3.42	2.36	-------	1.84	1.70
23	1.58	1.58	4.97	3.22	2.47	3.10	3.29	3.23	2.31	-------	1.84	1.70
24	1.84	1.71	4.46	2.94	2.38	3.60	3.15	3.17	2.29	-------	1.82	1.70
25	1.74	1.69	3.76	2.77	2.31	3.60	3.11	3.10	2.54	-------	1.82	1.70
26	1.64	1.68	3.42	2.40	2.26	3.70	3.00	2.99	2.64	-------	2.05	1.70
27	1.61	1.70	3.07	3.15	2.19	3.60	2.85	2.87	2.52	-------	1.98	1.70
28	1.59	1.68	3.82	3.31	2.04	4.35	2.77	2.86	2.49	-------	1.90	1.70
29	1.58	1.67	3.50	3.68	2.06	5.51	2.87	2.86	6.11	-------	1.84	-------
30	1.58	2.83	3.20	3.70	-------	5.70	2.89	2.95	5.05	-------	1.82	-------
31	1.62	-------	3.89	2.90	-------	4.89	-------	2.78	-------	-------	1.79	-------

Note.—Stage-discharge relation Jan. 7, 27-30, Feb. 10-15 and 17-27 affected by ice. Gage height Mar. 11, 13-22, June 15, July 20-31 and Aug. 3 not observed and Mar. 10, 12, Sept. 29 and 30 unsatisfactory.

Daily discharge, in second-feet, of Bald Eagle Creek at Beech Creek Station, for the year ending Sept. 30, 1924

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	145	145	1,020	2,140	665	395	3,450	1,650	815	2,140	308	212
2	145	138	665	1,650	665	395	1,900	1,650	815	1,530	302	203
3	141	135	660	3,280	595	460	1,650	1,420	778	1,240	280	199
4	138	133	492	3,280	560	492	1,900	1,650	740	1,650	302	194
5	135	161	702	2,270	1,060	1,900	2,140	1,320	665	1,060	302	190
6	135	185	1,140	1,520	1,650	1,900	7,880	1,240	665	895	302	190
7	133	212	1,650	1,200	935	1,650	11,400	1,140	665	895	291	185
8	133	203	1,140	1,140	778	1,060	4,680	1,320	665	1,770	291	185
9	131	185	1,020	895	630	815	2,970	5,040	740	2,400	291	185
10	129	177	1,140	815	550	750	2,400	4,500	630	1,420	286	185
11	126	169	1,140	2,080	500	650	1,770	3,800	595	815	286	185
12	123	157	1,060	2,140	420	600	1,530	9,080	665	975	280	185
13	133	145	975	1,650	400	550	1,320	7,640	1,240	1,420	270	185
14	133	141	895	1,320	360	500	1,240	4,140	1,770	1,060	270	185
15	135	138	702	1,020	300	500	1,060	3,120	1,400	855	270	185
16	133	133	630	2,020	313	460	1,020	2,400	1,240	778	260	185
17	133	145	595	5,400	300	460	935	1,770	1,020	665	255	185
18	129	145	525	2,400	300	420	1,140	1,530	895	595	255	185
19	129	141	492	1,900	300	400	1,530	1,650	778	560	255	185
20	145	138	460	1,650	280	420	1,420	1,420	702	440	255	185
21	141	133	428	1,020	300	460	1,420	1,530	630	380	255	185
22	145	133	1,140	1,140	300	650	1,530	1,420	560	340	250	185
23	138	138	3,620	1,240	300	1,140	1,320	1,240	525	360	250	185
24	250	190	2,820	1,020	300	1,650	1,240	1,240	525	320	240	185
25	208	181	1,900	855	300	1,650	1,140	1,140	702	320	240	185
26	161	177	1,420	595	320	1,770	1,060	1,060	778	300	365	185
27	149	185	1,140	550	340	1,650	935	935	665	280	324	185
28	141	177	1,900	650	365	2,680	855	935	665	280	280	185
29	138	173	1,530	900	365	4,500	935	935	5,590	260	250	1,200
30	138	935	1,240	1,100	-------	4,800	975	1,020	3,620	280	240	4,800
31	153	-------	2,020	975	-------	3,450	-------	895	-------	300	226	-------

Note.—Discharge Jan. 7, 27-30, Feb. 10-15 and 17-27 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Bald Eagle Creek at Milesburg. Discharge estimated Mar. 11, 13-22, June 15, July 20-31 and Aug. 3, because of no gage height record, and Mar. 10, 12, Sept. 29 and 30, because of unsatisfactory gage height record, from discharge of Bald Eagle Creek at Milesburg.

Monthly discharge of Bald Eagle Creek at Beech Creek Station, for the year ending Sept. 30, 1924.
(Drainage area 565 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	250	123	143	0.253	0.29
November	935	133	185	.327	.36
December	3,620	428	1,170	2.07	2.39
January	5,400	550	1,630	2.88	3.32
February	1,650	280	498	.881	.95
March	4,860	395	1,230	2.18	2.51
April	11,400	855	2,160	3.82	4.26
May	9,080	895	2,250	3.98	4.59
June	5,590	525	1,060	1.88	2.10
July	2,400	260	858	1.52	1.75
August	365	226	275	.487	.56
September	4,800	185	375	.664	.74
The Year	11,400	123	989	1.75	23.82

SUSQUEHANNA BASIN—STATION NO. 18

PINE CREEK AT CEDAR RUN

Location.—At single-span steel highway bridge, Cedar Run, Lycoming County.

Drainage Area.—590 square miles.

Records Available.—July 19, 1918, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by C. R. Nivison. Elevation of gage zero 781.96 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Right bank is high; left is low but not subject to overflow. Bed is composed of gravel. Control is at a riffle where the bed is composed of gravel, about 500 feet downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 8.6 feet at midnight April 6-7 (discharge, about 16,700 second-feet); minimum, 1.04 feet at 8 a. m. October 5 (discharge, 27 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined between 50 and 2,000 second-feet. Gage read to hundredths twice daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for high stages when they are fair.

The following discharge measurement was made by H. J. McIntyre: No. 19, May 26: Gage height, 2.48 feet; discharge, 940 second-feet.

Daily Mean Gage Height, in feet, of Pine Creek at Cedar Run, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.12	1.21	2.18	3.93	2.75	2.12	3.66	2.71	2.24	1.94	1.36	1.26
2	1.08	1.22	2.06	3.24	2.54	2.13	3.36	2.61	2.16	1.77	1.36	1.28
3	1.06	1.20	1.94	3.52	2.59	2.26	3.05	2.61	2.11	1.72	1.32	1.52
4	1.09	1.18	1.80	3.34	2.32	2.47	3.48	3.38	2.04	1.82	1.28	1.42
5	1.04	1.19	1.86	3.05	2.80	2.81	3.94	2.88	2.00	1.81	1.29	1.37
6	1.08	1.24	2.16	2.55	2.91	3.10	6.42	2.83	1.98	1.78	1.32	1.29
7	1.08	1.30	2.56	2.58	2.32	2.64	7.51	2.72	1.96	1.75	1.34	1.30
8	1.08	1.38	2.37	2.54	2.20	2.40	5.31	2.66	1.94	1.89	1.28	1.30
9	1.07	1.31	2.32	2.39	2.10	2.28	4.33	2.95	1.88	2.13	1.27	1.31
10	1.08	1.26	2.40	2.28	2.10	2.20	3.89	3.78	1.79	1.97	1.28	1.61
11	1.08	1.32	2.36	4.46	2.10	2.10	3.56	3.86	1.78	1.88	1.27	1.52
12	1.09	1.23	2.27	4.98	2.59	1.98	3.30	5.54	1.82	1.83	1.36	1.42
13	1.08	1.22	2.22	4.18	2.22	1.94	3.14	5.96	1.85	2.36	1.30	1.49
14	1.08	1.21	2.24	3.44	2.49	1.88	3.15	4.80	1.96	2.09	1.28	1.36
15	1.11	1.22	2.10	3.12	2.58	1.91	3.12	4.26	1.82	1.95	1.21	1.34
16	1.08	1.19	2.05	3.22	2.61	1.88	3.02	3.72	1.77	1.84	1.20	1.32
17	1.06	1.21	1.98	4.72	2.67	1.99	2.94	3.46	1.70	1.78	1.25	1.30
18	1.07	1.20	1.90	3.81	2.70	1.88	3.76	3.27	1.68	1.73	1.20	1.97
19	1.08	1.22	1.86	3.40	2.68	1.86	4.25	3.29	1.66	1.63	1.17	1.25
20	1.08	1.19	1.80	3.11	2.69	2.06	3.90	3.01	1.62	1.58	1.23	1.24
21	1.07	1.17	1.80	2.68	2.55	2.24	3.66	2.66	1.80	1.56	1.19	1.27
22	1.06	1.20	2.13	2.42	2.69	2.17	3.53	2.67	1.72	1.53	1.20	1.28
23	1.07	1.18	3.18	2.36	2.72	2.50	3.36	2.66	1.61	1.82	1.22	1.33
24	1.56	1.22	3.36	2.42	2.58	3.12	3.17	2.60	1.59	1.60	1.16	1.26
25	1.69	1.18	3.11	2.36	2.51	3.02	3.03	2.56	1.60	1.53	1.94	1.20
26	1.47	1.22	2.88	2.30	2.43	2.98	2.84	2.48	1.85	1.48	1.99	1.19
27	1.35	1.26	2.68	2.46	2.28	3.01	2.64	2.40	1.66	1.46	1.55	1.18
28	1.29	1.20	2.57	2.57	2.26	3.22	2.55	2.48	1.58	1.42	1.44	1.18
29	1.28	1.26	2.46	2.85	2.15	4.00	2.50	2.42	2.14	1.39	1.38	1.86
30	1.21	1.91	2.35	3.05	-------	4.60	2.44	2.39	2.04	1.44	1.36	5.16
31	1.21	-------	2.95	3.25	-------	4.18	-------	2.34	-------	1.38	1.30	-------

Note.—Stage-discharge relation Jan. 7-9, Jan. 23 to Feb. 4 and Feb. 10 to Mar. 4 affected by ice.

Daily discharge, in second-feet, of Pine Creek at Cedar Run, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	56	540	2,730	550	220	2,370	1,050	585	334	99	70
2	32	59	420	1,670	480	240	1,920	940	500	236	99	76
3	29	59	334	2,070	380	280	1,410	940	460	215	88	148
4	33	49	248	1,800	420	380	2,070	1,920	420	259	76	117
5	27	51	282	1,410	1,170	1,170	2,730	1,290	380	254	79	102
6	32	65	500	885	1,290	1 540	8 880	1,230	305	240	88	79
7	32	89	885	700	680	995	12,600	1,050	350	228	94	82
8	33	105	680	600	540	730	5,830	995	334	208	76	82
9	30	85	630	500	460	630	3,520	1,350	293	500	73	94
10	32	70	730	630	420	540	2,730	2,550	244	357	76	177
11	32	59	680	3,920	340	460	2,220	2,730	240	293	73	148
12	33	69	585	5,070	300	365	1,800	6,350	259	265	99	117
13	30	59	540	3,320	280	334	1,540	7,720	276	680	82	139
14	32	56	585	1,930	260	293	1,670	4,580	350	490	76	99
15	36	59	460	1,540	240	312	1,540	3,520	259	342	56	94
16	32	51	480	1,670	240	293	1,410	2,380	236	270	53	88
17	29	56	365	4,350	220	379	1,350	2,070	207	240	68	82
18	30	53	301	2,550	220	903	2,550	1,800	900	219	53	73
19	33	79	682	1,930	200	293	3,300	1,800	194	184	47	68
20	39	51	248	1,540	200	420	2,730	1,410	181	168	62	65
21	30	47	248	1,050	200	585	2,380	995	248	161	51	73
22	29	53	500	730	200	500	2,070	995	215	152	53	76
23	30	49	1,670	670	200	830	1,920	995	177	259	59	62
24	161	50	1,900	650	200	1,540	1,670	940	171	174	45	70
25	204	49	1,540	550	200	1,410	1,410	885	174	152	334	53
26	133	59	1,290	550	200	1,410	1,730	830	276	136	372	51
27	96	70	1,050	550	200	1,410	995	730	194	130	158	49
28	70	53	885	550	220	1,670	885	830	168	117	123	49
29	76	70	780	550	220	2,970	830	730	500	108	105	282
30	56	312	680	600	-------	4,130	780	730	420	123	99	5,570
31	56	-------	1,350	650	-------	3,320	-------	689	-------	105	82	-------

Note.—Discharge Jan. 7-9, Jan. 23 to Feb. 4 and Feb. 10 to Mar. 4 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Lycoming Creek near Trout Run and Towanda Creek near Monroeton.

Monthly discharge of Pine Creek at Cedar Run, for the year ending Sept. 30, 1924.
(Drainage area 590 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	204	27	51.2	0.087	0.10
November	312	47	68.7	.116	.13
December	1,930	248	698	1.18	1.36
January	5,070	500	1,540	2.61	3.01
February	1,290	200	369	.625	.67
March	4,130	220	964	1.63	1.88
April	12,600	780	2,610	4.42	4.93
May	7,720	680	1,940	3.12	3.60
June	585	168	296	.502	.56
July	680	105	247	.419	.48
August	372	45	96.7	.164	.19
September	5,570	49	278	.471	.53
The Year	12,600	27	757	1.28	17.44

SUSQUEHANNA BASIN—STATION NO. 19

LYCOMING CREEK NEAR TROUT RUN

Location.—At single-span steel highway bridge, about two and one-half miles above Trout Run, Lycoming County.

Drainage Area.—185 square miles.

Records Available.—December 4, 1913, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by E. L. Apker. Elevation of gage zero 693.4 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—The right bank overflows during extremely high stages; the left is high and does not overflow. The bed is composed of gravel and large stones. Control is at a riffle about 100 feet downstream from gage, where the bed is composed of gravel; probably permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 13.8 feet at 4 p. m. April 6 (discharge, about 11,000 second-feet); minimum 1.78 feet several times in October (discharge, 26 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve fairly well defined from 30 to 3,000 second-feet. Gage read to hundredths twice daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage heights to rating table. Results fair.

The following discharge measurement was made by H. J. McIntyre: No. 55, May 27: Gage height, 3.11 feet; discharge, 283 second-feet.

Daily Mean Gage Height, in feet, of Lycoming Creek near Trout Run, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.91	1.81	3.25	3.46	2.65	2.31	4.34	3.80	2.99	2.93	2.15	1.91
2	1.90	1.84	3.46	3.42	2.60	2.31	3.97	3.64	2.95	2.71	2.13	1.95
3	1.90	1.81	3.30	4.06	2.59	2.28	3.72	3.60	2.85	2.55	2.13	------
4	1.86	1.85	3.18	3.87	2.53	2.32	3.85	3.90	2.80	2.57	2.09	2.01
5	1.84	2.50	3.55	3.51	2.75	2.84	4.66	3.56	2.73	2.51	2.11	2.01
6	1.80	2.28	4.82	3.23	3.42	3.39	9.38	3.42	2.72	2.51	2.07	2.02
7	1.81	2.22	5.10	3.55	2.89	3.04	8.03	3.33	2.65	2.73	2.09	2.01
8	1.80	2.24	4.35	2.99	2.79	2.89	5.86	3.32	2.63	3.70	2.07	1.99
9	1.78	2.30	3.82	2.91	2.54	2.73	5.03	4.02	2.71	4.43	2.07	2.01
10	1.80	2.33	3.84	2.85	2.58	2.72	5.25	4.88	2.61	3.53	2.08	2.11
11	1.81	2.36	3.72	7.40	2.53	2.72	4.45	4.69	2.55	3.18	2.10	2.01
12	1.80	2.39	3.66	6.67	2.55	2.65	4.17	6.41	2.61	2.98	2.08	1.99
13	1.78	2.40	3.42	5.22	2.55	2.56	4.02	6.21	2.65	4.34	2.21	2.00
14	1.80	2.36	3.33	4.17	2.49	2.56	3.98	5.11	2.63	3.88	2.14	1.99
15	1.82	2.33	3.21	3.65	2.48	2.54	3.88	4.71	2.67	3.28	2.10	2.00
16	1.79	2.29	3.12	4.37	2.46	2.52	3.68	4.28	2.53	3.08	2.06	1.97
17	1.78	2.26	3.61	6.00	2.42	2.48	3.58	4.01	2.45	2.89	2.13	1.94
18	1.80	2.19	3.62	4.75	2.42	2.61	4.31	3.91	2.45	2.78	2.09	1.95
19	1.83	2.14	3.52	4.22	2.32	2.78	5.10	4.30	2.43	2.67	2.07	1.93
20	1.89	2.10	3.46	3.97	2.29	2.67	4.58	3.67	2.61	2.58	2.07	1.91
21	1.87	2.14	3.54	3.43	2.42	2.98	4.34	3.57	2.85	2.51	2.05	1.92
22	1.83	2.18	3.55	3.27	2.53	2.90	4.21	3.53	2.71	2.61	2.13	1.93
23	1.92	2.13	4.74	3.27	2.49	3.52	4.08	3.32	2.53	2.67	2.07	1.93
24	3.62	2.09	4.38	3.02	2.57	3.92	3.80	3.20	2.49	2.49	2.03	1.91
25	3.36	2.14	3.90	3.02	2.52	3.88	3.64	3.43	2.43	2.43	2.03	1.89
26	2.93	2.19	3.74	2.77	2.34	3.82	3.48	3.20	2.51	2.57	2.09	1.87
27	2.55	2.23	3.61	2.75	2.45	3.54	3.52	3.18	2.56	2.33	2.03	1.85
28	1.82	2.22	3.50	2.82	2.32	3.56	3.24	3.21	2.61	2.29	1.99	1.89
29	1.87	2.18	3.46	2.82	2.27	4.66	3.21	3.17	3.51	2.25	1.97	3.17
30	1.88	2.36	3.42	2.85	------	4.93	3.18	3.29	3.28	2.20	1.95	8.51
31	1.84	------	3.44	2.75	------	4.76	------	3.07	------	2.17	1.93	------

Note.—Stage-discarge relation Dec. 17-21, Jan. 7-9 and Feb 21 to Mar. 2 affected by ice. Gage height Sept.3 not observed.

Daily discharge, in second-feet, of Lycoming Creek near Trout Run, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	28	320	382	154	70	705	505	245	231	61	35
2	34	30	382	365	142	70	585	435	231	165	58	38
3	34	28	335	625	142	81	470	435	204	131	58	46
4	31	30	305	545	131	87	505	545	190	131	53	44
5	30	120	435	400	178	204	880	435	178	120	55	44
6	27	81	930	320	365	365	4,680	365	165	120	51	45
7	28	71	1,080	340	217	260	3,200	350	154	178	53	44
8	27	74	745	240	190	217	1,540	335	154	470	51	42
9	26	84	505	190	131	178	1,080	585	165	745	51	44
10	27	89	505	204	142	165	1,130	980	142	400	52	55
11	28	94	470	2,660	131	165	745	880	131	305	54	44
12	27	99	470	2,090	131	154	665	1,880	142	245	52	42
13	26	101	365	1,130	131	131	585	1,740	154	705	70	43
14	27	94	350	665	118	131	585	1,080	154	545	60	42
15	28	89	305	435	116	131	545	880	154	335	54	43
16	26	82	275	745	112	120	470	705	131	275	50	40
17	26	78	240	1,600	105	116	435	585	110	217	58	38
18	27	67	240	930	105	142	705	545	110	190	53	38
19	29	60	220	665	87	190	1,080	705	107	154	51	37
20	33	54	240	585	82	154	835	470	142	142	51	35
21	32	60	240	382	75	245	705	435	204	120	48	36
22	29	65	435	320	70	217	665	400	165	142	46	37
23	36	58	880	320	65	305	625	335	131	154	51	37
24	435	53	745	245	60	545	505	335	118	118	46	35
25	350	60	545	245	60	545	435	382	107	107	46	33
26	231	67	470	178	60	505	400	305	120	96	53	32
27	131	73	435	178	65	400	335	305	131	89	46	30
28	28	71	400	190	65	455	320	305	142	82	42	33
29	32	65	382	190	65	880	305	290	400	76	40	290
30	33	94	365	204	------	1,030	305	335	335	68	38	3,700
31	30	------	387	178	------	930	------	260	------	64	37	------

Note.—Discharge estimated Dec. 17-21, Jan. 7-9 and Feb. 21 to Mar. 2. because of ice from weather records, study of gage height graph and comparison with similar studies for Towanda Creek near Monroeton, and Sept. 3, because of no gage height record, from discharge at the same station.

Monthly discharge of Lycoming Creek near Trout Run, for the year ending Sept. 30, 1924.
(Drainage area 185 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	435	26	62.7	0.339	0.39
November	120	28	70.6	.382	.43
December	1,080	220	451	2.44	2.81
January	2,660	178	572	3.09	3.56
February	365	60	121	.654	.71
March	1,030	70	296	1.60	1.84
April	4,680	305	868	4.69	5.23
May	1,880	260	585	3.16	3.64
June	400	107	167	.903	1.01
July	745	64	223	1.20	1.38
August	70	37	51.3	.277	.32
September	3,700	30	170	.920	1.03
The Year	4,680	26	304	1.64	22.35

SUSQUEHANNA BASIN—STATION NO. 20

WEST BRANCH SUSQUEHANNA RIVER AT WILLIAMSPORT

Location.—At five-span steel highway bridge, Market Street, Williamsport, Lycoming County.

Drainage Area.—5,670 square miles.

Records Available.—March 1, 1895, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by Veronica E. April. Elevation of gage zero 494.55 feet, United States Geological Survey datum.

Discharge Measurements.—Made from upstream side of bridge or by wading.

Channel and Control.—Both banks are high and rocky. Bed is composed of silt and gravel; shifts slightly. Control probably permanent.

Extremes of Discharge.—Maximum stage during the year, 18.96 feet at 11.15 a. m. April 7 (discharge, 120,000 second-feet); minimum, 0.01 foot at 8 a. m. October 14 (discharge, 591 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent. Rating curve fairly well defined below 2,000 second-feet and well defined between 2,000 and 120,000 second-feet. Gage read to hundredths twice daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for low stages when they are fair.

The following discharge measurement was made by J. M. Snavely: No. 51, May 27: Gage height, 4.41 feet; discharge, 10,900 second-feet.

Daily Mean Gage Height, in feet, of West Branch Susquehanna River at Williamsport, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.25	0.43	3.70	8.25	3.40	1.74	9.82	4.63	4.16	9.64	0.99	0.84
2	.20	.40	5.45	10.12	3.28	1.78	8.16	5.71	4.02	6.84	.97	.71
3	.19	.38	4.17	8.81	3.09	1.87	6.83	6.21	3.82	5.36	.94	.60
4	.15	.32	3.37	10.25	2.77	1.92	6.43	6.05	3.59	4.60	.96	.69
5	.12	.32	2.97	10.04	2.76	2.40	7.09	6.29	3.37	4.17	.95	.75
6	.10	.34	3.55	7.86	4.21	4.22	9.95	5.98	3.15	3.95	.84	.79
7	.05	.50	6.02	6.19	5.17	5.73	18.16	5.53	3.11	3.72	.79	.69
8	.06	.63	7.30	5.36	4.52	5.77	14.84	5.09	2.92	4.65	.85	.69
9	.06	.77	6.12	4.66	3.67	5.11	10.85	6.03	2.82	7.76	.87	.66
10	.06	.77	5.85	4.27	2.99	4.45	9.19	9.97	2.92	7.20	.82	.70
11	.04	.74	6.22	5.62	3.06	4.35	8.05	10.08	2.78	5.86	.70	1.01
12	.04	.65	6.19	9.40	2.81	4.10	7.08	11.45	2.67	4.84	.81	1.26
13	.03	.67	5.66	8.74	2.96	3.81	6.43	15.57	2.78	5.12	.89	1.16
14	.02	.56	5.16	7.04	2.51	3.44	5.81	13.41	3.42	6.97	.79	.96
15	.05	.53	4.64	5.90	2.20	3.39	5.44	10.68	3.73	6.29	.61	.76
16	.06	.44	4.12	5.62	2.22	3.11	5.13	8.96	3.55	5.18	.57	.67
17	.06	.40	3.56	9.94	2.00	2.86	4.74	7.69	3.31	4.35	.50	.52
18	.06	.38	3.31	10.27	1.59	2.80	4.71	6.93	2.95	3.75	.60	.55
19	.06	.35	3.04	8.39	1.64	2.89	6.61	6.53	2.78	3.20	.60	.41
20	.06	.34	2.77	7.02	2.30	2.99	7.29	6.14	2.46	2.70	.60	.40
21	.06	.35	2.58	5.76	1.93	3.13	7.03	5.85	2.50	2.32	.74	.43
22	.06	.30	2.73	3.96	1.68	3.48	6.66	5.60	2.31	2.20	.80	.44
23	.06	.29	5.00	3.49	1.65	3.99	6.45	5.43	2.19	2.55	.83	.44
24	.64	.32	8.79	3.24	1.62	4.90	6.03	5.08	2.00	2.10	1.06	.44
25	1.47	.30	8.50	3.52	1.66	5.98	5.62	4.71	1.96	1.87	.88	.47
26	1.01	.39	7.20	3.57	1.58	6.38	5.21	4.62	2.62	1.64	2.33	.43
27	.74	.46	6.03	2.63	1.55	6.28	4.79	4.40	3.60	1.44	4.12	.40
28	.59	.48	5.48	2.11	1.67	5.99	4.32	4.19	3.39	1.32	2.86	.41
29	.48	.59	5.75	1.66	1.71	8.06	4.08	4.13	5.04	1.17	1.96	1.12
30	.42	.94	6.04	2.32	-------	11.62	4.28	4.26	10.38	1.11	1.35	7.46
31	.41	-------	5.87	3.25	-------	12.35	-------	4.20	-------	1.02	1.13	-------

Daily discharge, in second-feet, of West Branch Susquehanna River at Williamsport, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	875	1,120	8,700	29,100	7,750	3,370	38,600	11,900	10,400	36,800	2,040	1,780
2	810	1,080	15,400	39,800	7,440	3,580	29,100	16,700	9,690	21,900	1,950	1,530
3	798	1,050	10,400	32,300	6,850	3,800	21,900	19,000	9,020	15,400	1,950	1,380
4	750	968	7,750	40,400	6,000	3,800	19,900	18,100	8,380	11,900	1,950	1,530
5	714	968	6,560	39,200	6,000	4,980	23,400	19,500	7,750	10,400	1,950	1,610
6	690	996	8,380	27,500	10,400	10,400	39,200	18,100	7,140	9,690	1,780	1,690
7	635	1,230	18,100	19,000	14,500	16,700	111,000	15,800	6,850	8,700	1,690	1,530
8	646	1,460	24,400	15,400	11,500	17,200	76,500	14,000	6,280	11,900	1,780	1,530
9	646	1,610	18,500	12,300	8,700	14,000	44,100	18,100	6,000	26,400	1,780	1,460
10	646	1,610	17,200	10,800	6,560	11,200	34,600	39,200	6,280	23,900	1,690	1,530
11	624	1,610	19,000	16,200	6,850	11,200	28,000	39,800	6,000	17,600	1,530	2,040
12	624	1,460	19,000	35,700	6,000	10,000	23,400	48,000	5,730	12,800	1,690	2,580
13	613	1,460	16,700	31,800	6,560	9,020	19,900	84,400	6,000	14,000	1,860	2,400
14	602	1,300	14,500	22,900	5,220	7,750	17,200	63,700	7,750	22,900	1,690	1,950
15	635	1,300	11,900	17,600	4,490	7,750	15,400	43,500	8,700	19,500	1,380	1,610
16	646	1,140	10,000	16,200	4,490	6,850	14,000	33,500	8,380	14,500	1,300	1,460
17	646	1,080	8,380	38,600	4,020	6,280	12,300	26,400	7,440	11,200	1,230	1,230
18	646	1,050	7,440	41,000	3,160	6,000	12,300	22,400	6,560	9,020	1,380	1,300
19	646	1,010	6,560	30,200	3,160	6,280	20,900	20,400	6,000	7,140	1,380	1,100
20	646	996	6,000	22,900	4,730	6,560	24,400	18,500	5,220	5,730	1,380	1,080
21	646	1,010	5,470	17,200	3,800	6,850	22,900	17,200	5,220	4,730	1,610	1,120
22	646	940	5,730	9,690	3,370	8,060	21,400	16,200	4,730	4,490	1,690	1,140
23	646	927	13,600	8,060	3,160	9,690	19,900	15,400	4,490	5,470	1,780	1,140
24	1,460	968	32,300	7,140	3,160	13,200	18,100	14,000	4,020	4,260	2,220	1,140
25	2,960	940	30,700	8,060	3,370	18,100	16,200	12,300	4,020	3,800	1,860	1,180
26	2,040	1,070	23,900	8,380	3,160	19,900	14,500	11,900	5,470	3,160	4,730	1,120
27	1,610	1,170	18,100	5,470	3,160	19,500	12,800	11,200	8,380	2,770	10,000	1,080
28	1,380	1,200	15,800	4,260	3,370	18,100	10,800	10,400	7,750	2,580	6,280	1,100
29	1,200	1,380	17,200	3,370	3,370	28,500	10,000	10,000	13,600	2,400	4,020	2,220
30	1,110	1,950	18,100	4,730	-------	49,400	10,800	10,800	41,600	2,220	2,770	25,400
31	1,100	-------	17,600	7,140	-------	55,400	-------	10,400	-------	2,040	2,220	-------

Monthly discharge of West Branch Susquehanna River at Williamsport, for the year ending Sept. 30, 1924.
(Drainage area 5,670 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	2,960	602	914	0.161	0.19
November	1,950	927	1,200	.212	.24
December	32,300	5,470	14,600	2.57	2.96
January	41,000	3,370	20,100	3.54	4.08
February	14,500	3,160	5,670	1.00	1.08
March	55,400	3,370	13,300	2.35	2.71
April	111,000	10,000	26,100	4.60	5.13
May	84,400	10,000	23,600	4.16	4.80
June	41,600	4,020	8,160	1.44	1.61
July	36,800	2,040	11,300	1.99	2.29
August	10,000	1,230	2,340	.413	.48
September	25,400	1,080	2,300	.406	.45
The Year	111,000	602	10,800	1.90	26.02

SUSQUEHANNA BASIN—STATION NO. 21

SUSQUEHANNA RIVER AT SUNBURY

Location.—At twenty-eight-span steel bridge, Philadelphia & Reading Railway Company, Sunbury, Northumberland County.

Drainage Area.—18,200 square miles.

Records Available.—August 9, 1916, to September 30, 1924.

Gages.—Staff painted on left face of first pier, graduated to two hundredths between zero and 3.3 feet and to half feet above 3.0 feet. Read to hundredths between zero and 3.3 feet and to inches above 3.3 feet twice daily until November 30 by W. E. Bayler. Elevation of gage zero 420.00 feet, United States Geological Survey datum.

On November 10, a vertical staff gage consisting of a two inch plank 24 feet long, faced with enameled scales, graduated to feet and tenths, was attached to the center of the downstream end of the first pier. Read to half-tenths twice daily by W. E. Bayler; during high stages more frequently. Elevation of gage zero 419.00 feet. All gage heights published in this report refer to the new gage zero.

Discharge Measurements.—Made from downstream side of highway bridge about 3,700 feet downstream from the gage.

Channel and Control.—Both banks are high but subject to overflow during extreme floods. Bed is composed of gravel and rock. Control is the remaining portion of the old Shamokin Dam about 6,800 feet downstream from the gage; permanent.

Extremes of Stage.—Maximum gage height during the year, estimated from hydrograph, 15.8 feet at midnight April 7-8; minimum, 0.64 foot on October 19 and 23.

Ice.—Stage-discharge relation usually affected by ice.

Gage heights obtained at this station are for Flood Warning purposes.

Daily Mean Gage Height, in feet, of Susquehanna River at Sunbury, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.37	1.93	2.95	4.85	3.3	2.0	8.8	4.35	3.65	6.00	1.42	1.75
2	1.36	1.82	4.7	6.4	3.25	2.0	7.3	4.7	3.45	4.90	1.32	1.52
3	1.28	1.75	5.05	6.55	3.05	2.05	6.2	4.8	3.25	4.00	1.22	1.40
4	1.20	1.71	4.3	6.7	3.0	2.2	5.65	5.0	3.15	3.55	1.20	1.30
5	1.10	1.71	3.75	6.95	3.0	2.5	5.8	5.0	2.95	3.30	1.20	1.30
6	1.05	1.71	3.5	6.1	3.75	3.4	7.4	5.0	2.75	2.95	1.30	1.30
7	.99	1.70	4.6	5.45	4.0	5.15	13.8	5.0	2.8	2.75	1.30	1.30
8	.95	1.70	6.1	4.75	4.2	5.45	14.95	4.75	2.8	3.15	1.30	1.30
9	.90	1.70	5.8	3.9	4.05	4.75	12.4	4.6	2.85	4.98	1.30	1.30
10	.84	1.85	5.0	3.65	3.75	4.5	9.8	6.0	3.0	5.10	1.22	1.30
11	.83	2.00	4.85	4.3	3.15	4.05	8.1	7.55	3.0	4.50	1.25	1.40
12	.83	2.00	4.95	7.3	2.7	2.85	7.0	8.35	2.75	3.95	1.48	1.45
13	.80	2.00	4.8	8.9	2.6	3.65	6.4	11.1	2.7	3.55	1.70	1.50
14	.79	2.00	4.6	7.9	2.6	3.45	5.8	11.45	2.85	4.20	1.50	1.50
15	.79	2.00	4.35	6.65	2.5	3.15	5.45	9.25	2.95	4.20	1.38	1.60
16	.76	1.85	4.2	5.75	2.35	2.95	5.25	8.0	2.85	3.75	1.28	1.52
17	.72	1.74	4.05	7.85	2.15	2.8	5.05	7.2	2.7	3.30	1.20	1.50
18	.68	1.66	3.9	8.7	1.95	2.72	4.95	6.55	2.55	2.95	1.35	1.40
19	.64	1.59	3.8	8.0	1.75	2.7	5.45	6.05	2.35	2.65	1.32	1.40
20	.67	1.52	3.65	6.4	1.55	2.85	7.8	5.65	2.3	2.45	1.22	1.30
21	.67	1.50	3.55	5.65	1.75	3.0	7.6	5.45	2.65	2.25	1.20	1.30
22	.67	1.50	3.5	4.75	1.9	3.25	7.05	5.15	2.45	2.10	1.20	1.30
23	.64	1.50	4.0	4.0	2.05	3.45	6.85	4.85	2.25	2.55	1.20	1.20
24	1.33	1.50	5.6	3.6	2.2	3.95	6.55	4.55	2.4	2.35	1.20	1.20
25	3.28	1.50	6.6	3.35	2.1	5.1	6.2	4.35	2.4	2.05	1.30	1.15
26	3.30	1.50	6.1	3.05	2.1	5.9	5.7	4.15	2.65	1.85	1.30	1.10
27	3.22	1.50	5.25	2.85	2.1	5.95	5.1	3.95	2.8	1.80	2.00	1.20
28	2.80	1.50	4.8	2.5	2.1	5.6	4.75	3.9	2.95	1.72	2.90	1.20
29	2.46	1.58	4.6	2.25	2.1	5.75	4.45	3.75	3.85	1.55	2.50	1.30
30	2.25	1.58	4.85	2.2	-------	7.65	4.2	3.7	5.45	1.50	2.25	6.30
31	2.07	-------	4.8	2.9	-------	9.6	-------	3.8	-------	1.50	1.95	-------

Note.—Stage-discharge relation Feb. 21 to Mar. 3 affected by ice.

SUSQUEHANNA BASIN—STATION NO. 22

FRANKSTOWN BRANCH JUNIATA RIVER AT WILLIAMSBURG

Location.—At two-span steel highway bridge, Williamsburg, Blair County.

Drainage Area.—295 square miles.

Records Available.—October 24, 1916, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by R. E. Rhule. Elevation of gage zero 831.78 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge.

Channel and Control.—Both banks are high but subject to overflow at extremely high stages. Bed is composed of mud, gravel and small boulders. Control for low stages is a water main crossing the stream diagonally about 150 feet downstream from the gage; permanent. Medium and high stage control is at the first of a series of riffles about 450 feet downstream from the water main; probably permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 12.8 feet at 1 p. m. May 12 (discharge, about 11,000 second-feet); minimum, 1.45 feet at 4 p. m. October 14 (discharge, 56 second-feet).

Ice.—Stage-discharge relation rarely affected by ice.

Accuracy.—Stage-discharge relation permanent. Rating curve well defined between 70 and 2,000 second-feet. Gage read to hundredths twice daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for extremely high stages when they are fair.

The following discharge measurement was made by H. J. McIntyre: No. 21, May 21: Gage height, 4.95 feet; discharge, 1,240 second-feet.

Daily Mean Gage Height, in feet, of Frankstown Branch Juniata River at Williamsburg, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.63	1.52	3.27	5.32	3.10	2.90	5.54	4.35	3.24	4.32	2.38	1.76
2	1.52	1.54	2.72	4.48	3.01	2.98	4.74	3.49	3.22	3.74	2.03	1.82
3	1.52	1.52	2.46	6.08	3.01	3.24	4.41	3.40	3.10	3.42	2.00	1.94
4	1.51	1.50	2.40	5.93	2.85	3.29	4.58	3.62	3.08	3.88	2.01	1.76
5	1.52	1.60	4.42	4.78	4.28	4.67	4.59	3.22	2.90	3.82	2.01	1.78
6	1.50	1.76	5.50	3.78	4.54	4.83	7.95	3.06	3.42	3.72	2.30	1.86
7	1.49	1.72	4.64	3.56	3.51	4.50	7.41	2.96	3.06	4.67	1.98	1.78
8	1.52	1.80	3.77	3.61	3.15	3.76	5.87	4.70	2.76	4.26	2.00	1.72
9	1.52	1.66	3.47	3.24	2.76	3.38	5.18	8.03	2.86	3.98	1.92	1.78
10	1.53	1.59	3.91	3.13	2.70	3.34	4.84	6.17	2.75	3.68	1.90	1.79
11	1.53	1.50	3.73	5.88	2.73	3.32	4.42	5.78	2.62	3.38	1.87	1.70
12	1.52	1.55	3.41	4.83	2.72	3.16	4.18	11.10	2.78	3.21	2.44	1.76
13	1.49	1.57	3.26	4.12	2.58	3.35	3.92	8.24	3.79	4.48	2.02	1.72
14	1.46	1.57	3.06	3.76	2.48	3.25	3.78	6.20	4.00	3.44	1.91	1.72
15	1.56	1.58	2.70	3.29	2.46	3.06	3.60	5.66	3.46	3.09	1.85	1.67
16	1.63	1.58	2.58	5.00	2.08	2.88	3.42	4.91	3.24	2.93	1.84	1.66
17	1.55	1.58	2.50	7.88	2.14	2.82	3.28	4.53	3.06	2.79	1.97	1.64
18	1.59	1.56	2.42	5.19	2.31	3.12	3.89	4.22	2.86	2.66	1.98	1.66
19	1.57	1.58	2.32	4.40	2.02	3.28	3.79	4.44	2.81	2.52	1.83	1.68
20	1.56	1.60	2.26	4.08	1.74	3.57	3.62	4.18	2.69	2.44	2.20	1.65
21	1.59	1.60	2.24	3.12	2.22	3.76	3.54	4.69	2.52	2.39	2.11	1.94
22	1.55	1.60	5.28	2.72	2.21	4.30	3.64	4.31	2.46	2.34	1.98	1.90
23	1.54	1.62	7.40	3.30	2.24	4.92	3.48	4.02	2.44	2.36	2.04	1.88
24	1.70	2.08	5.68	3.04	2.12	5.24	3.20	3.85	2.42	2.22	2.04	1.72
25	1.64	1.77	4.46	2.98	2.16	5.08	3.21	3.67	2.98	2.16	1.94	1.72
26	1.56	1.69	3.96	2.52	2.18	4.98	3.04	3.47	2.60	2.16	2.10	1.64
27	1.54	1.70	3.52	2.38	2.21	4.76	2.94	3.29	2.81	2.09	1.89	1.65
28	1.50	1.66	5.88	2.50	2.42	5.07	2.86	3.24	2.92	2.02	1.82	1.70
29	1.57	1.69	5.04	2.58	2.65	7.80	2.94	3.19	9.00	2.01	1.80	2.77
30	1.53	3.80	4.44	3.15	-------	8.68	3.80	3.83	5.90	2.18	1.80	4.89
31	1.54	-------	5.56	3.66	-------	6.76	-------	3.32	-------	2.06	1.75	-------

Daily discharge, in second-feet, of Frankstown Branch Juniata River at Williamsburg, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	82	66	492	1,460	425	365	1,590	950	457	900	237	105
2	66	69	310	1,000	395	395	1,100	564	457	640	160	115
3	66	66	248	2,030	395	457	950	527	425	527	150	138
4	64	63	237	1,880	351	492	1,050	602	425	724	150	105
5	66	77	950	1,160	900	1,100	1,050	457	365	682	150	109
6	63	105	1,590	682	1,000	1,160	3,780	425	527	640	215	123
7	62	98	1,050	602	564	1,000	3,150	380	425	1,100	146	100
8	66	112	682	602	457	682	1,880	1,100	324	900	150	98
9	66	86	564	457	324	527	1,400	3,780	351	767	134	109
10	67	76	724	425	310	492	1,160	2,110	324	640	130	110
11	67	63	640	1,880	324	492	950	1,800	284	527	124	94
12	66	70	527	1,160	310	457	855	8,100	337	457	248	105
13	62	73	492	811	284	527	724	4,000	682	1,000	150	98
14	57	73	425	682	260	492	682	2,110	767	527	132	98
15	72	74	310	492	248	425	602	1,730	564	425	121	88
16	82	74	284	1,280	171	365	527	1,220	457	380	119	86
17	70	74	260	3,670	182	337	492	1,000	425	337	144	83
18	76	72	237	1,400	215	425	724	855	351	297	146	86
19	73	74	215	950	150	492	682	950	337	260	117	90
20	72	77	204	811	102	602	602	855	310	248	193	85
21	66	77	204	425	193	682	564	1,100	260	237	171	138
22	70	77	1,460	310	193	900	602	900	248	226	146	130
23	69	80	3,150	492	204	1,220	564	767	248	296	160	126
24	94	171	1,730	395	171	1,400	457	682	237	193	160	98
25	83	107	1,000	395	182	1,340	457	640	395	182	138	98
26	72	92	767	260	193	1,280	395	564	284	182	171	83
27	69	94	564	237	193	1,160	380	492	337	171	128	85
28	63	86	1,880	260	237	1,340	351	457	365	150	115	94
29	73	80	1,280	284	297	3,560	380	457	4,970	150	112	324
30	67	682	950	457	-------	4,590	682	682	1,880	193	112	1,220
31	69	-------	1,660	640	-------	2,600	-------	492	-------	160	103	-------

Monthly discharge of Frankstown Branch Juniata River at Williamsburg, for the year ending Sept. 30, 1924.

(Drainage area 295 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	94	57	69.7	0.236	0.27
November	682	63	103	.349	.39
December	3,150	204	809	2.74	3.16
January	3,670	237	890	3.02	3.48
February	1,000	102	318	1.08	1.16
March	4,590	337	1,010	3.42	3.94
April	3,780	351	959	3.25	3.63
May	8,100	380	1,310	4.44	5.12
June	4,970	237	594	2.01	2.24
July	1,100	150	453	1.54	1.78
August	248	103	149	.505	.58
September	1,220	83	148	.502	.56
The Year	8,100	57	571	1.94	26.31

SUSQUEHANNA BASIN—STATION NO. 23

LITTLE JUNIATA RIVER AT TYRONE

Location.—At single-span steel highway bridge, Pennsylvania Avenue, Tyrone, Blair County.

Drainage Area.—107 square miles.

Records Available.—August 22, 1918, to December 31, 1919, and April 1, 1920, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read to hundredths twice daily by Chas. G. Waple; during high stages more frequently. Elevation of gage zero 877.04 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge.

Channel and Control.—Both sides of the channel are outlined by retaining walls extending upstream and downstream from the bridge. Bed is composed of gravel and rock. Control is at a riffle about 700 feet downstream from the gage. Stage-discharge relation for medium and high stages is affected by back water from Bald Eagle Creek, which confluences with the Little Juniata about 200 feet downstream from the gage.

Extremes of Stage.—Maximum gage height during the year, estimated from hydrograph, 8.9 feet at 10 a. m. June 29; minimum, 0.95 foot at 4.15 p. m. October 22.

Ice.—Stage-discharge relation usually affected by ice.

The following discharge measurement was made by H. J. McIntyre: No. 7, May 22: Gage height, 3.26 feet; discharge, 463 second-feet.

Gage heights obtained at this station are for Flood Warning purposes.

Daily Mean Gage Height, in feet, of Little Juniata River at Tyrone, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.09	1.00	2.50	-------	2.17	1.85	3.85	3.42	2.48	3.12	1.36	1.40
2	1.06	.99	2.28	-------	2.10	1.92	3.68	3.22	2.43	2.94	1.34	1.36
3	1.04	.98	2.16	4.50	2.04	1.98	3.42	2.85	2.38	2.75	1.34	1.30
4	1.02	1.12	2.43	4.00	1.99	2.06	3.31	2.77	2.31	3.39	1.32	1.28
5	1.00	1.22	3.52	3.50	2.88	2.38	3.30	2.74	2.43	2.82	1.30	1.29
6	.98	1.26	4.00	3.14	2.93	2.75	5.86	2.70	2.45	2.52	1.47	1.28
7	.98	1.28	3.54	2.96	2.68	2.66	5.29	2.62	2.40	3.45	1.43	1.28
8	.98	1.22	3.18	2.76	2.39	2.53	4.18	4.03	2.31	3.10	1.35	1.24
9	.97	1.16	3.02	2.56	2.29	2.43	4.05	5.30	2.28	2.83	1.28	1.36
10	1.04	1.14	3.10	2.52	2.22	2.36	3.65	4.54	2.23	2.65	1.26	1.32
11	1.04	1.13	3.03	4.38	2.14	2.39	3.32	4.69	2.18	2.47	1.38	1.30
12	1.04	1.12	2.90	3.77	2.08	2.34	3.12	7.23	2.81	2.21	1.32	1.27
13	1.03	1.12	2.68	3.16	1.96	2.34	2.98	5.27	3.32	2.77	1.28	1.24
14	1.02	1.11	2.46	2.88	1.81	2.31	2.86	4.72	3.02	2.42	1.26	1.20
15	1.05	1.10	2.26	2.71	1.62	2.24	2.75	4.32	2.72	2.20	1.24	1.16
16	1.04	1.09	2.18	3.73	1.50	2.17	2.58	3.92	2.52	1.94	1.24	1.11
17	1.02	1.08	2.12	4.38	1.50	2.07	2.43	3.58	2.33	1.84	1.54	1.08
18	1.00	1.08	2.00	3.40	1.52	2.00	3.08	3.52	2.22	1.80	1.44	1.06
19	.98	1.06	1.92	3.06	1.56	2.02	3.06	3.64	2.16	1.78	1.45	1.08
20	.98	1.02	1.90	2.70	1.58	2.18	2.90	3.48	2.11	1.73	2.04	1.22
21	.96	1.02	2.40	2.62	1.58	2.50	2.82	3.38	2.06	1.68	1.80	1.49
22	.96	1.18	4.66	2.54	1.62	3.41	2.94	3.16	2.02	1.64	1.84	1.43
23	1.22	1.32	-------	2.48	1.58	3.62	2.70	2.98	1.98	1.58	1.74	1.38
24	1.20	1.40	-------	2.40	1.50	3.41	2.52	2.87	1.96	1.54	1.62	1.34
25	1.08	1.34	-------	2.34	1.54	3.33	2.44	2.68	1.94	1.52	2.85	1.32
26	1.04	1.32	-------	2.27	1.61	3.38	2.38	2.56	2.36	1.50	2.22	1.30
27	1.01	1.30	-------	2.22	1.68	3.62	2.33	2.54	2.23	1.46	1.78	1.28
28	1.04	1.28	-------	2.14	1.74	3.82	2.36	2.50	2.18	1.44	1.63	1.26
29	1.03	1.80	-------	2.16	1.82	5.36	2.43	2.58	6.36	1.42	1.54	3.16
30	1.04	3.48	-------	2.18	-------	4.91	2.49	2.53	4.00	1.40	1.46	4.25
31	1.02	-------	-------	2.22	-------	4.20	-------	2.50	-------	1.38	1.43	-------

Note.—Gage height Dec. 23 to Jan. 2 unsatisfactory.

SUSQUEHANNA BASIN—STATION NO. 24

RAYSTOWN BRANCH JUNIATA RIVER AT SAXTON

Location.—At two-span steel highway bridge, Saxton, Bedford County.

Drainage Area.—790 square miles.

Records Available.—August 31, 1911, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by D. R. Jenkins and Geo. W. Darr. Elevation of gage zero 789.91 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Banks are high but subject to overflow during extremely high stages. Control was at a heavy boulder riffle 350 feet downstream from the gage until about the first of February 1921, when a new one was formed by the reconstruction of the Huntingdon & Broad Top Mountain Railroad bridge 250 feet downstream from the gage, which was partially washed away during the high flow of November 29, 1921.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 13.6 feet at midnight May 12-13 (discharge, about 29,000 second-feet); minimum, 0.93 foot from 5 p. m. October 7 to 7 a. m. October 8 (discharge, 95 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation probably permanent except when affected by ice. Control section was probably changed during high water of May 12-13, 1924. Two rating tables used: the first applicable to May 12, well defined between 100 and 1,000 second-feet and fairly well defined from 1,000 to 12,000 second-feet; the second applicable since that date, fairly well defined below 12,000 second feet. Gage read to hundredths twice daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for low stages, when they are fair.

The following discharge measurement was made by H. J. McIntyre: No. 55, May 21: Gage height, 3.64 feet; discharge, 1,840 second-feet.

Daily Mean Gage Height, in feet, of Raystown Branch Juniata River at Saxton, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.19	1.07	3.46	4.36	3.41	4.17	5.75	2.83	2.55	4.83	1.70	1.22
2	1.15	1.10	3.20	4.06	3.03	3.87	4.87	3.26	2.63	3.99	1.66	1.34
3	1.10	1.06	2.65	4.36	3.07	3.17	4.45	3.04	2.74	3.75	1.59	1.35
4	1.07	1.07	2.38	5.89	2.96	2.72	4.83	3.02	2.62	4.13	1.51	1.34
5	1.02	1.18	3.16	5.26	2.93	3.85	4.64	2.88	2.47	4.36	1.45	1.33
6	.97	1.25	4.21	3.76	4.19	4.87	5.67	2.72	2.50	3.54	1.43	1.34
7	.94	1.32	4.17	3.26	3.78	5.40	7.49	2.62	2.65	3.68	1.43	1.25
8	.95	1.50	3.65	3.26	3.21	4.35	6.17	3.49	2.43	4.73	1.42	1.25
9	1.07	1.42	3.31	3.06	2.88	3.70	5.13	8.57	2.60	4.17	1.38	1.25
10	1.07	1.45	3.19	3.26	2.82	3.67	4.67	7.66	3.16	3.67	1.35	1.21
11	1.08	1.34	3.29	4.58	2.70	3.57	4.20	5.72	3.77	3.37	1.31	1.19
12	1.08	1.30	3.23	4.91	2.77	3.37	3.93	10.76	2.79	2.95	2.49	1.15
13	1.09	1.25	3.03	4.18	2.63	3.33	3.73	10.81	3.07	4.79	2.90	1.19
14	1.07	1.17	2.90	3.76	2.41	3.27	3.45	6.56	4.22	4.66	2.21	1.18
15	1.04	1.22	2.54	3.36	2.36	3.14	3.22	5.54	3.89	3.52	2.03	1.11
16	1.07	1.20	2.33	4.13	2.13	2.92	3.11	4.80	3.52	3.30	1.72	1.13
17	1.05	1.21	2.23	8.29	2.28	2.83	2.93	4.30	3.15	2.90	1.61	1.09
18	1.09	1.16	2.15	5.61	3.46	3.17	3.16	3.98	3.20	2.67	1.66	1.11
19	1.12	1.17	2.13	4.51	4.30	3.63	3.85	3.79	3.68	2.48	1.60	1.06
20	1.14	1.17	1.99	4.04	5.80	4.50	3.39	3.43	3.18	2.20	1.75	1.13
21	1.04	1.16	2.00	3.28	5.78	4.49	3.41	3.44	2.76	2.19	1.74	1.15
22	.96	1.17	2.38	2.49	5.47	4.07	3.30	3.92	2.49	2.11	1.71	1.25
23	.96	1.16	3.76	2.80	5.13	5.07	3.22	3.44	2.34	2.03	1.56	1.45
24	1.11	1.30	5.14	2.62	4.83	6.20	3.06	3.29	2.50	1.98	1.50	1.38
25	1.20	1.39	4.26	2.16	4.90	6.34	2.89	3.19	3.44	1.87	1.56	1.38
26	1.19	1.70	3.71	2.57	4.87	6.40	2.80	3.01	2.46	1.78	1.48	1.26
27	1.26	1.85	4.26	2.42	4.90	5.17	2.64	2.88	3.22	1.71	1.44	1.20
28	1.25	1.63	4.83	2.42	4.70	5.70	2.55	2.88	4.61	1.64	1.52	1.19
29	1.16	1.57	4.38	4.06	4.70	9.00	2.57	2.77	8.11	1.59	1.37	1.62
30	1.31	1.98	3.96	4.06	-------	11.25	2.70	2.96	7.40	1.61	1.31	5.26
31	1.13	-------	3.74	4.36	-------	7.35	-------	2.81	-------	1.76	1.26	-------

Note.—Stage-discharge relation Jan. 24-30 and Feb. 18 to Mar. 4 affected by ice.

Daily discharge, in second-feet, of Raystown Branch Juniata River at Saxton, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	130	108	1,540	2,760	1,480	600	5,020	898	828	3,400	356	199
2	122	115	1,240	2,350	1,090	650	3,520	1,300	902	2,280	336	236
3	115	108	738	2,760	1,090	650	2,760	1,090	980	2,030	316	236
4	108	108	570	5,210	990	700	3,360	1,040	865	2,410	280	226
5	100	130	1,190	4,160	990	1,960	3,050	940	755	2,820	265	236
6	95	140	2,480	1,960	2,480	3,520	4,840	775	790	1,680	265	236
7	95	150	2,480	1,300	1,960	4,320	8,520	700	902	1,910	265	211
8	95	200	1,720	1,300	1,240	2,760	5,800	1,600	755	3,250	250	211
9	108	175	1,360	1,090	940	1,840	3,840	11,200	865	2,540	250	211
10	108	188	1,240	1,300	855	1,840	3,200	8,980	1,370	1,910	236	199
11	115	162	1,360	3,050	775	1,720	2,480	4,840	2,030	1,570	223	199
12	115	150	1,300	3,520	815	1,420	2,090	17,400	1,020	1,140	790	188
13	115	140	1,090	2,480	738	1,420	1,840	17,400	1,280	3,360	1,100	199
14	108	122	940	1,960	570	1,300	1,540	6,800	2,480	3,250	595	199
15	108	130	665	1,420	542	1,190	1,240	4,600	2,150	1,680	515	177
16	108	130	542	2,350	435	940	1,140	3,400	1,680	1,470	356	188
17	108	130	488	10,400	515	898	990	2,680	1,370	1,100	316	177
18	115	122	435	4,660	460	1,190	1,190	2,280	1,370	902	336	177
19	115	122	435	2,900	400	1,720	1,960	2,030	1,910	790	316	168
20	122	122	370	2,220	360	2,900	1,480	1,570	1,370	655	377	188
21	108	122	370	1,360	360	2,900	1,480	1,570	980	595	377	188
22	95	122	570	630	360	2,350	1,360	2,150	790	540	356	226
23	95	122	1,960	855	400	3,840	1,240	1,570	688	515	298	265
24	115	150	3,840	650	460	5,800	1,090	1,470	790	490	280	250
25	130	175	2,620	500	460	6,000	940	1,370	1,570	420	298	250
26	130	260	1,840	400	480	6,200	855	1,180	755	398	280	211
27	140	312	2,620	380	500	4,000	738	1,100	1,370	356	265	199
28	140	245	3,360	400	550	4,840	665	1,100	3,100	336	280	199
29	122	215	2,760	550	550	12,200	665	980	9,950	316	236	316
30	150	370	2,220	1,200	-------	18,800	775	1,140	8,400	316	223	4,160
31	122	-------	1,840	2,760	-------	8,300	-------	1,020	-------	377	211	-------

Note.—Discharge Jan. 24-30 and Feb. 18 to Mar. 4 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Frankstown Branch Juniata River at Williamsburg.

Monthly discharge of Raystown Branch Juniata River at Saxton, for the year ending Sept. 30, 1924.

(Drainage area 790 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	150	95	115	0.146	0.17
November	370	108	162	.205	.23
December	3,840	370	1,490	1.89	2.18
January	10,400	380	2,220	2.81	3.24
February	2,480	360	788	.997	1.08
March	18,800	600	3,510	4.44	5.12
April	8,520	665	2,320	2.94	3.28
May	17,400	700	3,420	4.33	4.99
June	9,950	688	1,800	2.28	2.54
July	3,400	316	1,450	1.84	2.12
August	1,100	211	350	.443	.51
September	4,160	168	345	.437	.49
The Year	18,800	95	1,510	1.91	25.95

SUSQUEHANNA BASIN—STATION NO. 25

TUSCARORA CREEK NEAR PORT ROYAL

Location.—At single-span steel highway bridge about two miles southwest of Port Royal, Juniata County.

Drainage Area.—205 square miles.

Records Available.—August 21, 1911, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by Stuart Groninger.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Both banks are low but not subject to overflow except during extremely high stages. Bed is composed of gravel and rocks. Control is at riffle about 500 feet downstream from the gage; practically permanent.

Extremes of Discharge.—Maximum stage during the year, 12.40 feet observed at 6 p. m. May 12 (discharge, about 10,000 second-feet); minimum, 1.87 feet at 6 p. m. September 11 (discharge, 8.3 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Regulation.—The operation of grist mills upstream from the station may cause variation in stage during low flows.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined between 15 and 5,000 second-feet. Gage read to hundredths twice daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for extreme stages when they are fair.

Discharge measurements of Tuscarora Creek near Port Royal, during the year ending Sept. 30, 1924.

No.	Date	Made by	Gage height	Discharge
			Feet	Sec.-ft.
30	Oct. 17a	J. M. Snavely	2.08	16.8
31	17a	do	2.06	16.3
32	May 20	do	4.00	426

a Measurement made by wading 500 feet downstream from the gage.

Daily Mean Gage Height, in feet, of Tuscarora Creek near Port Royal, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.29	2.20	3.82	4.26	4.07	3.20	5.10	3.78	3.22	4.36	2.52	2.28
2	2.31	2.18	3.18	3.80	3.75	3.32	4.73	3.56	3.30	3.97	2.52	2.32
3	2.22	2.17	2.85	4.58	3.75	3.51	4.63	3.38	3.20	3.67	2.46	2.38
4	2.19	2.10	2.70	5.21	3.68	3.52	5.21	3.40	3.17	3.50	2.50	2.37
5	2.18	2.26	3.00	4.44	4.09	4.69	5.12	3.30	3.10	3.49	2.48	2.33
6	2.15	2.29	4.30	3.35	4.11	5.34	7.96	3.20	3.12	3.26	2.44	2.34
7	2.02	2.37	4.40	3.54	3.48	5.31	9.44	3.14	3.58	3.76	2.52	2.35
8	2.06	2.64	3.66	3.58	3.24	4.40	6.51	3.72	3.32	6.85	2.40	2.31
9	2.18	2.54	3.27	3.41	3.10	3.90	5.54	7.94	3.21	5.33	2.38	2.67
10	2.16	2.40	3.19	3.31	3.18	4.08	5.10	6.49	3.14	4.41	2.37	2.35
11	2.12	2.35	3.28	4.93	3.01	4.16	4.65	5.80	3.02	4.06	2.38	1.90
12	2.06	2.37	3.22	4.96	3.15	4.76	4.35	10.24	3.06	3.85	3.16	2.24
13	2.14	2.38	3.10	4.22	2.92	4.64	4.14	8.00	3.49	4.54	3.39	2.15
14	2.05	2.39	3.15	3.90	2.86	4.41	3.98	6.12	5.05	3.91	3.17	2.20
15	2.13	2.28	2.96	3.41	2.96	3.98	3.80	5.54	3.94	3.48	3.21	2.31
16	2.19	2.26	2.79	5.18	3.18	3.64	3.68	4.90	3.57	3.32	2.75	2.24
17	2.14	2.28	2.81	8.87	3.12	3.61	3.57	4.57	3.43	3.20	2.65	2.23
18	2.14	2.26	2.78	5.54	3.22	3.73	4.10	4.30	3.66	3.07	2.64	2.18
19	2.13	2.34	2.71	4.75	3.33	4.02	4.93	4.25	3.26	2.96	2.54	2.25
20	2.16	2.22	2.64	4.43	3.62	4.30	4.32	4.02	3.11	2.89	2.74	2.20
21	2.08	2.21	2.59	3.56	3.65	4.49	4.20	4.07	3.00	2.84	2.87	2.16
22	2.27	2.21	3.57	4.60	3.76	4.52	4.08	4.13	2.92	2.82	2.62	2.31
23	2.20	2.20	5.82	4.70	3.70	5.30	3.92	3.76	2.81	2.90	2.54	2.33
24	2.46	2.37	5.52	4.42	3.38	5.52	3.70	3.64	2.82	2.83	2.50	2.34
25	2.82	2.48	4.36	4.20	3.34	5.34	3.73	3.58	2.85	2.71	2.47	2.24
26	2.45	2.40	3.87	4.32	3.22	5.15	3.60	3.46	2.80	2.65	2.44	2.26
27	2.27	2.32	3.52	3.80	3.14	4.87	3.42	3.36	3.02	2.61	2.42	2.18
28	2.20	2.28	4.60	3.96	3.20	5.02	3.38	3.40	4.33	2.58	2.36	2.14
29	2.25	2.26	4.50	3.89	3.19	6.29	3.49	3.44	6.90	2.60	2.32	2.88
30	2.24	2.88	4.01	3.95	-------	6.90	3.46	3.85	5.77	2.54	2.30	7.16
31	2.24	-------	4.41	4.46	-------	5.66	-------	3.35	-------	2.58	2.29	-------

Note.—Stage-discharge relation Jan. 22-29 and Feb. 15-29 affected by ice.

Daily discharge, in second-feet, of Tuscarora Creek near Port Royal, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	37	29	350	535	445	180	1,020	350	180	588	63	36
2	39	27	180	350	332	205	780	270	205	405	63	40
3	31	26	112	725	332	255	725	230	180	300	56	47
4	28	21	87	1,080	315	255	1,080	230	170	255	61	46
5	27	34	140	642	465	780	1,020	205	160	255	59	41
6	25	37	560	218	465	1,140	3,460	180	160	192	54	42
7	16	46	615	270	255	1,140	5,080	170	285	332	63	44
8	18	79	300	285	192	615	2,040	315	205	2,300	49	39
9	27	66	192	230	160	385	1,280	3,350	180	1,140	47	83
10	25	49	180	205	180	465	1,020	2,040	170	615	46	44
11	22	44	205	890	140	488	725	1,490	140	445	47	9.6
12	18	46	180	950	170	835	588	6,180	150	368	170	33
13	24	47	160	510	124	725	488	3,460	255	670	230	25
14	18	48	170	385	113	615	425	1,720	950	385	170	29
15	23	36	132	230	120	425	350	1,280	405	255	180	39
16	28	34	101	1,080	110	300	315	890	270	205	95	33
17	24	36	105	4,460	120	285	270	725	242	180	80	32
18	24	34	100	1,280	120	332	465	560	300	150	79	27
19	23	42	89	835	95	425	890	535	192	132	66	34
20	25	31	79	642	95	560	560	425	160	118	93	29
21	20	30	72	270	100	670	510	445	140	110	115	25
22	35	30	270	160	110	670	465	488	124	106	76	39
23	29	29	1,490	260	120	1,140	385	332	105	120	66	41
24	56	46	1,280	240	110	1,280	315	300	106	108	61	42
25	106	59	588	180	100	1,140	332	285	112	89	57	33
26	55	49	368	160	100	1,080	285	242	103	80	54	34
27	35	40	255	160	110	890	230	218	140	74	51	27
28	29	36	725	160	120	950	230	230	588	71	45	24
29	34	34	670	200	140	1,870	255	242	2,400	73	40	117
30	33	117	425	405	-------	2,400	242	368	1,490	66	38	2,660
31	33	-------	615	642	-------	1,420	-------	218	-------	71	37	-------

Note.—Discharge Jan. 22-29 and Feb. 15-29 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Frankstown Branch Juniata River at Williamsburg and Raystown Branch Juniata River at Saxton.

Monthly discharge of Tuscarora Creek near Port Royal, for the year ending Sept. 30, 1924.

(Drainage area 205 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	106	16	31.2	0.152	0.18
November	117	21	42.7	.208	.23
December	1,490	72	348	1.70	1.96
January	4,460	160	601	2.93	3.38
February	465	95	185	.902	.97
March	2,400	180	772	3.77	4.35
April	5,080	230	861	4.20	4.69
May	6,180	170	902	4.40	5.07
June	2,400	103	342	1.67	1.86
July	2,300	66	331	1.61	1.86
August	230	37	77.8	.400	.46
September	2,660	9.6	126	.615	.69
The Year	6,180	9.6	387	1.89	25.70

SUSQUEHANNA BASIN—STATION NO. 26

JUNIATA RIVER AT NEWPORT

Location.—At four-span steel highway bridge, Newport, Perry County.

Drainage Area.—3,380 square miles.

Records Available.—March 21, 1899, to July 14, 1906, and January 7, 1907, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by A. R. Bortel. Elevation of gage zero 363.32 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of hard material. Low-water control is at a riffle about 400 feet downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, 18.97 feet observed at 2 p. m. May 13 (discharge, 66,600 second-feet); minimum, 2.90 feet from 8 a. m. October 17 to 8 a. m. October 18, 8 a. m. October 22, and on November 3 (discharge, 470 second-feet).

Ice.—Stage-dicharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve fairly well defined below 10,000 second-feet and well defined from 10,000 to 70,000 second-feet. Gage read to half tenths twice daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

Discharge measurements of Juniata River at Newport, during the year ending Sept. 30, 1924.

No.	Date	Made by	Gage height	Discharge
			Feet	Sec.-ft.
76	Oct. 16	H. J. McIntyre	2.93	509
77	16	J. M. Snavely	2.97	549
78	May 13	H. J. McIntyre	18.72	66,600
79	13	J. M. Snavely	18.84	68,000
80	20	H. J. McIntyre	6.27	9,890

Daily Mean Gage Height, in feet, of Juniata River at Newport, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.22	3.13	3.68	7.00	5.22	4.12	11.50	4.97	4.82	10.22	3.58	3.26
2	3.14	3.03	4.63	6.68	4.88	4.15	8.70	4.65	4.72	7.32	3.61	3.34
3	3.24	2.90	4.35	6.68	4.70	4.32	7.45	4.37	4.65	6.17	3.51	3.20
4	3.21	2.98	4.12	8.35	4.68	4.30	7.32	5.17	4.57	5.56	3.64	3.24
5	3.19	3.00	4.00	8.55	4.92	5.05	7.50	5.09	4.57	5.84	3.46	3.28
6	3.05	2.98	4.68	7.05	5.58	6.55	9.62	4.89	4.52	6.31	3.44	3.31
7	3.15	3.05	5.83	5.82	5.98	7.62	15.30	4.75	4.72	5.74	3.32	3.30
8	3.19	3.28	6.25	5.30	5.40	7.22	12.88	4.87	4.82	6.88	3.44	3.30
9	3.02	3.32	5.48	5.45	5.08	6.13	10.15	4.82	4.59	8.74	3.38	3.32
10	3.18	3.25	5.00	5.25	4.58	5.65	8.58	13.07	4.47	6.96	3.09	3.22
11	3.17	3.40	4.95	6.08	4.40	5.60	7.52	11.45	4.47	6.06	3.16	3.22
12	3.17	3.16	4.88	7.88	4.35	5.92	6.72	13.12	4.39	5.54	3.81	3.21
13	3.16	3.13	4.80	7.55	4.18	6.02	6.28	18.27	4.67	5.58	3.94	3.18
14	3.19	3.09	4.68	6.40	4.10	5.68	5.80	14.97	5.92	5.86	4.11	3.16
15	3.15	3.10	4.52	5.62	4.12	5.20	5.55	10.59	6.22	5.94	4.26	3.14
16	3.06	3.21	4.20	5.88	4.02	4.92	5.32	8.77	5.77	5.31	3.98	3.28
17	2.90	3.06	4.25	11.56	4.00	4.70	5.12	7.47	5.27	4.81	3.78	3.26
18	3.00	3.08	3.98	12.50	3.82	4.65	5.12	6.85	5.37	4.64	3.84	3.23
19	3.05	3.01	3.98	8.70	3.78	4.85	5.68	6.49	5.02	4.44	3.68	3.20
20	2.94	3.07	3.78	7.20	3.40	5.15	5.90	6.29	4.87	4.26	3.86	3.30
21	2.95	2.97	3.72	5.95	3.60	5.60	5.67	5.97	4.77	4.21	3.91	3.30
22	2.94	3.04	4.02	5.62	3.45	6.15	5.49	6.07	4.55	4.11	3.26	3.23
23	3.00	3.02	6.25	5.30	3.85	6.80	5.37	5.99	4.35	4.11	3.81	3.21
24	3.21	3.00	8.42	5.00	4.00	7.52	5.19	5.69	4.22	4.06	3.74	3.35
25	3.29	3.08	7.80	4.85	4.00	8.58	5.07	5.42	4.32	3.94	3.76	3.35
26	3.08	3.16	6.65	4.80	3.80	8.20	4.95	5.29	4.35	3.86	3.61	3.27
27	3.11	3.13	5.78	4.40	4.15	7.85	4.75	5.07	4.52	3.84	3.68	3.17
28	3.11	3.19	6.00	3.88	4.00	7.55	4.67	4.92	5.05	3.84	3.76	3.21
29	3.07	3.13	7.32	4.00	4.02	8.67	4.69	4.89	7.42	3.78	3.66	3.37
30	3.03	3.22	7.20	4.15	-------	14.07	4.75	4.99	13.55	3.74	3.61	7.90
31	3.04	-------	6.70	4.52	-------	14.50	-------	5.09	-------	3.64	3.48	-------

Note.—Stage-discharge relation Feb. 21-29 affected by ice.

Daily discharge, in second-feet, of Juniata River at Newport, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	936	788	1,900	12,100	6,170	2,880	29,700	5,550	4,380	24,200	1,680	1,010
2	804	642	4,320	11,000	5,240	3,020	18,300	4,320	4,620	13,300	1,680	1,160
3	972	470	3,580	11,000	4,620	3,430	13,500	3,580	4,320	9,300	1,470	900
4	918	574	2,880	17,200	4,620	3,430	13,200	6,170	4,320	7,440	1,790	972
5	884	600	2,620	18,000	5,240	5,550	13,900	5,860	4,320	8,080	1,390	1,040
6	670	574	4,620	12,100	7,440	10,700	21,800	5,240	4,020	9,690	1,350	1,100
7	820	670	8,080	8,080	8,720	14,300	47,000	4,930	4,620	7,760	1,120	1,080
8	884	1,040	9,360	6,480	6,800	12,800	35,800	5,240	4,930	11,800	1,350	1,080
9	628	1,120	7,120	6,800	5,860	9,040	24,200	4,930	4,320	18,500	1,230	1,120
10	868	954	5,550	6,170	4,320	7,440	18,000	36,700	3,870	12,100	726	936
11	852	1,270	5,550	9,040	3,720	7,440	13,900	29,200	3,870	9,040	836	936
12	852	836	5,240	15,400	3,580	8,400	11,000	36,700	3,720	7,120	2,130	918
13	836	788	4,930	14,300	3,150	8,720	9,690	62,700	4,620	7,440	2,500	868
14	884	726	4,620	10,000	2,880	7,760	8,080	45,500	8,400	8,400	2,880	836
15	820	740	4,020	7,440	2,880	6,170	7,440	25,900	9,360	8,400	3,290	804
16	684	918	3,150	8,400	2,620	5,240	6,480	18,700	8,080	6,480	2,620	1,040
17	470	684	3,290	30,100	2,620	4,620	5,860	13,900	6,480	4,930	2,130	1,010
18	600	712	2,620	34,000	2,130	4,320	5,860	11,400	6,800	4,320	2,250	954
19	670	614	2,620	18,300	2,130	4,930	7,760	10,400	5,360	3,870	1,900	900
20	522	798	2,130	12,800	1,270	6,170	8,400	9,690	5,240	3,290	2,250	1,080
21	535	561	1,900	8,720	1,100	7,440	7,760	8,720	4,930	3,150	2,370	1,080
22	522	656	2,620	7,440	1,100	9,360	7,120	9,040	4,320	2,880	1,010	954
23	600	628	9,360	6,480	1,400	11,400	6,800	8,720	3,580	2,880	2,130	918
24	918	600	17,200	5,550	1,900	13,900	6,170	7,760	3,150	2,750	2,020	1,180
25	1,060	712	15,000	4,930	2,000	18,000	5,860	6,800	3,430	2,500	2,020	1,180
26	712	836	10,700	4,930	1,700	16,500	5,550	6,480	3,580	2,250	1,680	1,030
27	756	788	8,080	3,720	1,800	15,000	4,930	5,860	4,020	2,250	1,900	852
28	756	884	8,720	2,370	2,400	14,300	4,620	5,240	5,550	2,250	2,020	918
29	798	788	13,200	2,620	2,600	18,300	4,620	5,240	13,500	2,130	1,790	1,210
30	642	936	12,800	3,020	-------	41,200	4,930	5,550	38,900	2,020	1,680	15,400
31	656	-------	11,000	4,020	-------	43,100	-------	5,860	-------	1,790	1,430	-------

Note.—Discharge Feb. 21-29 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for other stations in the drainage basin.

Monthly discharge of Juniata River at Newport, for the year ending Sept. 30, 1924.

(Drainage area 3,380 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	1,060	470	759	0.225	0.26
November	1,270	470	764	.226	.25
December	17,200	1,900	6,410	1.90	2.19
January	34,000	2,370	10,400	3.08	3.55
February	8,720	1,100	3,520	1.04	1.12
March	43,100	2,880	11,100	3.28	3.78
April	47,000	4,620	12,600	3.73	4.16
May	62,700	3,580	13,600	4.02	4.64
June	38,900	3,150	6,380	1.89	2.11
July	24,200	1,790	6,840	2.02	2.33
August	3,290	726	1,830	.541	.62
September	15,400	804	1,480	.438	.49
The Year	62,700	470	6,340	1.88	25.50

SUSQUEHANNA BASIN—STATION NO. 27

SUSQUEHANNA RIVER AT HARRISBURG

Location.—At fifteen-span steel highway bridge, Walnut Street, Harrisburg, Dauphin County.

Drainage Area.—24,100 square miles.

Records Available.—January 1, 1891, to September 30, 1924.

Gages.—Standard chain attached to upstream side of bridge; read by employees of the Department of Forests and Waters and United States Weather Bureau. Elevation of gage zero 289.4 feet, United States Geological Survey datum. Sanborn water-stage recorder is located on top, downstream corner, of left abutment and referred to same datum as chain gage.

Discharge Measurements.—Made from downstream side of bridge.

Channel and Control.—Banks are high and not subject to overflow. Bed is composed of gravel and boulders. A low dam 4,200 feet downstream from the gage, completed on August 29, 1916, is the control for all except high stages.

Extremes of Discharge.—Maximum stage during the year, 17.00 feet observed at 7 a. m. April 8 (discharge, 324,000 second-feet); minimum, 3.11 feet at 7.15 a. m. October 23 (discharge, 3,200 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined between 4,000 and 300,000 second feet. Gage read to hundredths twice daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage height, computed from a continuous daily hydrograph obtained by plotting chain gage readings in connection with water-stage recorder graph, to rating table. Results good.

Discharge measurements of Susquehanna River at Harrisburg, during the year ending Sept. 30, 1924.

No.	Date	Made by	Gage height	Discharge
			Feet	Sec.-ft
113	Apr. 8	J. M. Snavely and H. J. McIntyre	16.78	326,000
114	July 29	do	3.74	10,500

Daily Mean Gage Height, in feet, of Susquehanna River at Harrisburg, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.47	3.78	3.95	6.16	5.93	5.57	10.93	5.48	5.25	7.98	3.65	3.77
2	3.46	3.72	4.92	6.65	6.30	5.55	9.15	5.73	5.12	7.01	3.60	3.66
3	3.39	3.68	5.58	7.43	5.77	5.53	7.90	5.92	4.97	6.03	3.56	3.58
4	3.39	3.61	5.51	7.87	5.18	5.44	7.22	6.00	4.86	5.43	3.54	3.50
5	3.34	3.60	5.26	8.09	5.26	6.46	7.11	6.07	4.75	5.22	3.52	3.46
6	3.30	3.61	5.21	7.36	5.96	7.80	8.24	6.07	4.67	5.25	3.47	3.45
7	3.28	3.61	5.68	6.55	5.99	6.64	14.22	5.97	4.67	4.97	3.46	3.46
8	3.26	3.60	6.42	6.09	5.84	7.05	16.68	5.97	4.65	5.27	3.46	3.47
9	3.24	3.64	6.77	5.71	5.87	6.25	14.62	6.20	4.58	6.32	3.47	3.46
10	3.20	3.72	6.36	5.37	5.47	6.09	11.80	7.96	4.56	6.82	3.44	3.45
11	3.22	3.75	6.00	5.50	5.21	5.87	9.87	9.18	4.64	6.27	3.40	3.41
12	3.20	3.80	5.99	7.30	5.00	5.98	8.53	10.15	4.53	5.70	3.66	3.44
13	3.20	3.80	6.00	9.28	4.85	5.92	7.64	13.59	4.49	5.41	4.00	3.48
14	3.19	3.77	5.82	9.29	4.70	5.51	7.06	13.94	4.88	5.29	3.98	3.51
15	3.18	3.74	5.65	8.01	4.50	5.26	6.64	11.65	4.97	5.65	3.87	3.51
16	3.18	3.69	5.44	7.10	4.40	4.95	6.35	9.74	4.95	5.52	3.76	3.61
17	3.16	3.66	5.18	9.47	4.20	4.78	6.24	8.65	4.79	5.07	3.61	3.55
18	3.14	3.62	5.02	10.80	4.23	4.70	6.11	7.83	4.76	4.81	3.59	3.49
19	3.16	3.60	4.95	9.81	5.42	4.63	6.31	7.21	4.55	4.59	3.64	3.48
20	3.15	3.56	4.72	8.20	5.08	4.69	7.57	6.92	4.45	4.41	3.62	3.46
21	3.15	3.52	4.59	6.95	5.00	4.86	8.61	6.65	4.41	4.23	3.63	3.44
22	3.13	3.53	4.54	6.05	4.90	5.11	8.02	6.51	4.50	4.13	3.69	3.43
23	3.12	3.51	5.08	5.52	4.94	5.46	7.56	6.28	4.32	4.15	3.58	3.41
24	3.36	3.48	6.51	5.35	5.48	5.70	7.34	6.01	4.21	4.29	3.51	3.40
25	3.65	3.46	7.48	5.17	5.72	6.53	7.11	5.79	4.21	4.21	3.50	3.39
26	3.66	3.53	7.25	4.91	5.65	7.08	6.69	5.59	4.32	3.96	3.53	3.38
27	3.66	3.53	6.68	6.03	5.55	7.39	6.28	5.46	4.59	3.86	3.52	3.36
28	4.42	3.54	6.15	6.78	5.59	7.13	5.97	5.36	4.71	3.80	3.76	3.38
29	4.26	3.55	6.14	6.55	5.59	7.04	5.74	5.27	5.42	3.76	4.26	3.48
30	4.03	3.64	6.14	6.72	-------	8.88	5.53	5.21	7.37	3.69	4.08	6.05
31	3.88	-------	6.19	7.33	-------	11.28	-------	5.25	-------	3.66	3.92	-------

Note.—Stage-discharge relation Jan. 27 to Mar. 7 affected by ice.

Daily discharge, in second-feet, of Susquehanna River at Harrisburg, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6,970	10,800	12,700	53,500	22,000	16,000	157,000	38,900	33,100	92,100	9,000	10,200
2	6,860	9,600	27,600	62,000	24,000	18,000	118,000	43,000	31,200	70,600	8,400	9,000
3	6,100	9,600	40,900	79,200	36,000	18,000	90,000	47,200	29,400	49,300	7,850	8,400
4	6,100	8,400	38,900	90,000	28,000	19,000	74,900	49,300	27,600	36,900	7,850	7,300
5	5,570	8,400	35,000	94,200	28,000	26,000	72,800	51,400	25,800	33,100	7,300	6,860
6	5,150	8,400	33,100	79,200	40,000	40,000	98,600	51,400	24,000	33,100	6,970	6,750
7	4,940	8,400	43,000	62,000	46,000	60,000	243,000	49,300	24,000	29,400	6,860	6,860
8	4,750	8,400	57,700	51,400	38,000	70,600	315,000	49,300	22,300	35,000	6,860	6,970
9	4,520	9,000	66,300	43,600	30,000	53,500	254,000	53,500	22,300	53,500	6,970	6,860
10	4,100	9,600	57,700	36,900	38,000	51,400	178,000	92,100	22,300	66,300	6,640	6,750
11	4,310	10,200	49,300	38,900	26,000	47,200	134,000	118,000	22,300	55,600	6,200	6,310
12	4,100	10,800	49,300	77,000	26,000	49,300	103,000	141,000	20,700	43,000	9,000	6,640
13	4,100	10,800	49,300	120,000	22,000	47,200	83,500	226,000	20,700	36,900	13,300	7,080
14	4,000	10,200	45,100	120,000	19,000	38,900	72,800	254,000	27,000	35,000	13,300	7,300
15	3,900	10,200	40,900	92,100	19,000	35,000	62,000	174,000	29,400	40,900	11,400	7,300
16	3,900	9,600	36,900	72,800	18,000	29,400	57,700	129,000	29,400	38,900	10,200	8,400
17	3,700	9,000	33,100	125,000	15,000	25,800	53,500	105,000	25,800	31,200	8,400	7,850
18	3,500	8,400	29,400	155,000	12,000	24,000	51,400	87,800	25,800	25,800	8,400	7,190
19	3,700	8,400	25,800	152,000	12,000	24,000	55,000	74,900	22,300	22,300	9,000	7,080
20	3,600	7,800	24,000	90,400	13,000	24,000	83,500	68,400	19,900	19,100	8,400	6,800
21	3,600	7,300	22,300	70,600	15,000	27,600	105,000	62,000	19,100	16,800	9,000	6,640
22	3,400	7,850	20,700	49,300	15,000	31,200	92,100	59,800	20,700	15,400	9,600	6,530
23	3,300	7,300	31,200	38,900	14,000	38,900	83,500	55,600	17,600	13,400	8,400	6,310
24	5,780	7,080	59,800	36,900	10,000	43,000	77,000	49,300	16,100	17,600	7,850	6,200
25	9,000	6,860	81,400	33,100	10,000	53,500	72,800	45,100	16,100	16,100	7,300	6,100
26	9,000	7,850	74,900	27,600	11,000	72,800	64,400	40,900	17,600	12,700	7,850	5,590
27	9,000	7,850	64,200	19,000	13,000	69,200	58,000	38,900	22,300	11,400	7,300	5,780
28	19,100	7,850	53,500	15,000	14,000	72,800	49,300	36,900	24,000	10,800	10,200	5,980
29	16,800	7,850	51,400	15,000	15,000	70,600	43,000	55,000	36,900	10,200	16,800	7,080
30	14,000	9,000	51,400	18,000	-------	112,000	38,900	33,100	79,200	9,600	14,700	49,300
31	12,000	-------	53,500	19,000	-------	166,000	-------	33,100	-------	9,000	12,000	-------

Note.—Discharge Jan. 27 to Mar. 7 estimated, because of ice, from weather records, study of gage height graph and comparison with discharge of Susquehanna River at Holtwood.

Monthly discharge of Susquehanna River at Harrisburg, for the year ending Sept. 30, 1924.
(Drainage area 24,100 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	19,100	3,300	6,410	0.266	0.31
November	10,800	6,860	8,760	.363	.40
December	81,400	12,700	43,900	1.82	2.10
January	155,000	15,000	65,300	2.71	3.12
February	46,000	10,000	21,500	.892	.96
March	166,000	16,000	47,900	1.99	2.29
April	315,000	38,900	101,000	4.19	4.68
May	234,000	33,100	76,600	3.18	3.67
June	79,200	16,000	25,800	1.07	1.19
July	92,100	9,000	32,000	1.33	1.53
August	16,800	6,200	9,140	.379	.44
September	49,300	5,780	8,460	.351	.39
The Year	315,000	3,300	37,400	1.55	21.08

SUSQUEHANNA BASIN—STATION NO. 28

LITTLE SWATARA CREEK NEAR PINE GROVE

Location.—At single-span steel highway bridge, about three-quarters of a mile upstream from mouth of creek and one mile southeast of Pine Grove, Schuylkill County.

Drainage Area.—34 square miles.

Records Available.—November 18, 1919, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by Miss Lottie Mars.

Discharge Measurements.—Made from upstream side of bridge or by wading.

Channel and Control.—Both banks are of medium height; overflow begins at a stage of about 6 feet. Bed is composed of coarse gravel. Control is at a riffle, at the upstream end of an island, about 100 feet downstream from the gage. Bed at control is coarse gravel; probably permanent.

Extremes of discharge.—Maximum stage during the year, estimated from hydrogragph, 8.0 feet at 1 p. m. September 30 (discharge, about 1,500 second-feet); minimum, 1.11 feet at 6.30 p. m. October 18 (discharge, 4.2 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined below 500 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

Discharge measurements of Little Swatara Creek near Pine Grove, during the year ending Sept. 30, 1924.

No.	Date	Made by	Gage height	Discharge
			Feet	Sec.-ft.
20	Nov. 14a	J. M. Snavely	1.37	12.9
21	14c	do	1.49	19.6
22	14b	do	1.50	20.1
23	Aug. 21c	H. J. McIntyre	1.56	24.8
24	21c	do	1.54	26.8

a Measurement made by wading 200 feet upstream from the gage.
b Measurement made by wading 25 feet upstream from the gage.
c Measurement made by wading 300 feet upstream from the gage.

Daily Mean Gage Height, in feet, of Little Swatara Creek near Pine Grove, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.39	1.58	3.14	2.38	2.02	2.12	2.20	1.96	1.94	2.45	1.38	1.23
2	1.30	1.55	2.49	2.31	1.80	2.14	2.15	1.88	1.93	2.28	1.31	1.25
3	1.30	1.53	2.21	2.82	1.75	2.19	2.12	1.84	1.86	2.27	1.28	1.30
4	1.28	1.50	2.60	2.54	1.71	2.40	2.31	1.82	1.87	2.11	1.28	1.20
5	1.26	1.50	2.44	2.36	2.35	2.87	2.39	1.78	1.75	2.02	1.28	1.36
6	1.28	1.51	2.77	2.33	2.20	3.05	3.34	1.74	1.79	1.96	1.32	1.43
7	1.24	1.51	2.62	2.34	1.92	3.07	3.75	1.70	1.89	1.80	1.29	1.31
8	1.28	1.51	2.41	2.26	1.83	2.40	2.90	1.78	1 80	2.00	1.26	1.19
9	1.27	1.38	2.20	1.96	1.86	2.29	2.60	2.09	1.90	2.08	1.27	1.19
10	1.21	1.38	2.10	1.89	1.96	2.18	2.41	2.68	1.76	1.90	1.22	1.32
11	1.23	1.41	2.01	2.62	1.88	2.51	2.23	2.63	1.73	1.86	1.27	1.26
12	1.17	1.45	1.89	2.28	1.80	2.71	2.11	3.55	1.90	1.79	1.88	1.28
13	1.16	1.31	1.89	2.16	1.78	2.40	2.66	3.09	2.26	2.01	1.73	1.33
14	1.17	1.34	1.84	2.08	1.91	2.21	1.90	2.68	2 47	1.77	1.89	1.25
15	1.28	1.36	1.77	1.99	1.80	2.02	1.91	2.70	2.25	1.69	1.54	1.25
16	1.15	1.36	1.76	2.60	1.85	1.93	1.88	2.55	2.10	1.68	1.44	1.24
17	1.15	1.55	1.73	3.84	1.82	1.88	1.85	2.35	1.97	1.65	1.55	1.22
18	1.13	1.4[illegible]	1.66	2.91	1.87	1.87	2.47	2.19	1.93	1.57	1.54	1.26
19	1.17	1.42	1.64	2.56	1.84	1.85	2.25	2.15	1.89	1.51	1.46	1.23
20	1.41	1.40	1.67	2.44	2.46	1.85	2.18	2.10	3.03	1.53	1.55	1.22
21	1.20	1.36	1.66	2.23	2.60	2.00	2.13	2.00	2.70	1.51	1.45	1.25
22	1.30	1.35	2.19	2.37	2.36	2.11	2.15	2.02	2.33	1.49	1.38	1.30
23	1.15	1.40	3.06	2.52	2.27	2.05	2.05	1.93	2.17	1.58	1.40	1.3[illegible]
24	3.00	1.61	2.92	2.39	2.18	2.05	1.97	1.92	2 01	1.46	1.39	1.19
25	2.55	1.51	2.50	2.94	1.94	2.07	1.98	1.88	2.34	1.45	1.36	1.24
26	2.07	1.52	2.26	2.29	2.05	2.17	1.89	1.84	2.03	1.42	1.38	1.15
27	1.89	1.54	2.14	2.54	1.99	2.13	1.86	1.88	2.56	1.43	1.34	1.14
28	1.89	1.44	2.46	3.02	2.08	2.20	1.82	2.02	2.64	1.37	1.32	1.22
29	1.73	1.46	2.22	2.81	2.12	2.30	2.04	2.06	3.18	1.36	1.30	1.95
30	1.68	2.89	2.16	2.44	-------	2.34	1.88	2.04	2.75	1.37	1.27	6.50
31	1.67	-------	2.50	2.22	-------	2.20	-------	1.98	-------	1.36	1.26	-------

Note.—Stage-discharge relation Jan. 6-8, Jan. 20 to Feb. 3 and Feb. 9 to Mar. 6 affected by ice.

Daily discharge, in second-feet, of Little Swatara Creek near Pine Grove, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	13	26	321	157	46	40	117	72	68	172	13	6.8
2	9.1	24	281	141	38	36	105	59	67	135	11	7.4
3	9.1	22	119	251	36	40	100	54	56	132	8.4	9.1
4	8.4	20	78	194	37	42	141	51	58	98	8.4	6.1
5	7.7	20	170	152	150	160	159	46	42	82	8.4	12
6	8.4	21	240	130	117	300	369	41	47	72	10	16
7	7.1	21	205	110	65	321	489	36	61	61	8.7	9.5
8	8.4	21	163	85	52	161	274	46	48	78	7.7	5.8
9	8.0	13	117	72	46	137	215	228	62	92	8.0	13
10	6.3	13	96	61	42	113	163	123	43	62	6.6	10
11	6.8	15	80	205	38	183	124	216	40	56	8.0	7.7
12	5.4	17	71	135	36	228	98	441	61	47	59	8.4
13	5.2	9.5	61	109	34	161	89	321	130	80	40	10
14	5.4	11	54	92	32	119	76	278	176	44	48	7.4
15	8.4	12	44	76	30	82	64	223	128	35	23	7.4
16	5.0	12	43	205	24	67	59	205	96	34	16	7.1
17	5.0	24	40	480	20	59	55	150	73	32	24	6.6
18	4.6	15	32	274	20	58	176	115	67	25	23	7.7
19	5.4	15	31	194	20	55	128	106	61	21	18	6.8
20	15	14	33	130	26	55	113	96	297	52	24	6.6
21	6.1	12	32	70	30	78	102	94	223	21	17	7.4
22	9.1	11	115	70	30	98	106	82	146	19	13	9.1
23	5.0	14	321	80	24	87	87	67	111	26	14	31
24	297	82	274	70	20	87	73	65	80	18	13	5.8
25	194	21	183	80	20	91	75	59	148	17	12	7.1
26	91	21	130	60	22	111	61	54	83	15	13	5.0
27	61	23	104	55	26	102	56	59	194	16	11	4.8
28	61	16	174	55	34	117	51	82	216	12	10	6.6
29	40	18	121	70	36	139	85	89	345	12	9.1	70
30	34	274	109	70	-------	148	75	85	240	12	8.0	1,140
31	33	-------	183	55	-------	117	-------	75	-------	12	7.7	-------

Note.—Discharge Jan. 6-8, Jan. 20 to Feb. 3 and Feb. 9 to Mar. 6 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Swatara Creek at Harpers and Little Schuylkill River at Tamaqua.

Monthly discharge of Little Swatara Creek near Pine Grove, for the year ending Sept. 30, 1924.
(Drainage area 34 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	297	4.6	31.7	0.932	1.07
November	274	9.5	26.1	.768	.86
December	321	31	126	3.71	4.28
January	489	55	129	3.79	4.37
February	150	20	39.7	1.17	1.26
March	321	36	116	3.41	3.93
April	489	51	129	3.79	4.23
May	441	36	122	3.59	4.14
June	345	40	116	3.41	3.80
July	172	12	50.3	1.48	1.71
August	59	6.6	16.2	.476	.55
September	1,140	4.8	47.9	1.41	1.57
The Year	1,140	4.6	79.4	2.34	31.77

SUSQUEHANNA BASIN—STATION NO. 29

SWATARA CREEK AT HARPERS

Location.—At two-span steel highway bridge, Harpers, Lebanon County, about five miles northwest of Annville.

Drainage Area.—334 square miles.

Records Available.—December 17, 1918, to September 30, 1924.

Gage.— Standard chain attached to downstream side of bridge; read by Elmer G. Shuey.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—At low and medium stages, the stream flows under the left span of the bridge. There is a flood plane under the right span which is covered by water during high stages. Outside of the flood plane both banks are of medium height but not subject to overflow. Bed is composed of culm and gravel. Control is at a riffle about 300 feet downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 13.0 feet at midnight September 30—October 1, 1924, when the stream was rising (discharge about 11,200 second-feet); a crest stage of 12.0 feet, estimated from hydrograph, was reached at 7 a. m. January 17 (discharge, about 10,000 second-feet); minimum, 0.38 foot several times in October (discharge, 48 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined below 500 second-feet and fairly well defined between 500 and 6,000 second-feet. Gage read to hundredths twice daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

Discharge measurements of Swatara Creek at Harpers, during the year ending Sept. 30, 1924.

No.	Date	Made by	Gage height	Discharge
			Feet	Sec.-ft.
23	Nov. 13a	J. M. Snavely	0.85	162
24	13a	do	.85	155
25	13	do	.85	157
26	Aug. 21	do	1.30	291

a Measurement made by wading 250 feet downstream from the gage.

Daily Mean Gage Height, in feet, of Swatara Creek at Harpers, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.69	1.22	5.26	3.72	1.92	1.71	2.73	2.40	2.24	3.82	0.88	0.46
2	.62	1.09	3.46	3.15	1.90	1.66	2.68	2.07	2.26	3.46	.78	.46
3	.56	.99	2.97	4.18	1.70	1.70	2.93	1.93	2.03	3.87	.72	.56
4	.56	.96	2.59	4.30	1.67	1.87	3.47	1.88	2.05	2.90	.68	.50
5	.50	.96	3.36	3.65	3.08	3.48	3.50	1.80	1.81	2.62	.67	.54
6	.47	.96	4.49	2.78	4.22	5.04	5.04	1.70	1.79	2.40	.68	.70
7	.44	.97	4.21	3.07	2.40	5.10	7.35	1.61	2.41	2.35	.63	.70
8	.45	1.22	3.51	2.82	1.98	3.93	5.23	1.78	1.78	2.54	.62	.50
9	.45	1.04	3.04	2.47	1.81	3.24	4.22	3.65	1.96	4.10	.58	.56
10	.46	.86	2.85	2.18	1.70	3.43	3.82	4.12	1.74	2.51	.57	.70
11	.44	.80	2.68	4.43	1.73	4.66	3.32	4.11	1.52	2.14	.54	.65
12	.45	.86	2.33	4.07	1.66	5.11	2.94	6.75	1.84	1.90	3.18	.52
13	.44	.85	2.12	3.04	1.53	3.66	2.66	6.04	3.39	2.47	2.62	.48
14	.40	.78	2.14	2.84	1.46	3.13	2.52	4.86	4.50	2.26	1.87	.44
15	.41	.74	1.84	2.46	1.60	2.70	2.27	5.24	3.22	1.78	1.30	.42
16	.42	.66	1.72	3.87	1.56	2.29	2.14	4.06	2.87	1.62	.97	.43
17	.40	.90	1.69	9.12	1.32	2.18	2.02	3.68	2.50	1.49	.93	.43
18	.40	1.00	1.54	5.32	1.46	2.19	3.00	3.30	2.33	1.37	1.14	.44
19	.42	.83	1.50	4.32	1.11	2.20	4.10	3.36	2.22	1.28	.94	.41
20	.60	.76	1.44	3.74	1.18	2.08	2.92	2.83	3.27	1.20	.98	.41
21	.54	.68	1.41	2.98	2.13	2.50	2.99	2.90	5.40	1.18	1.24	.42
22	.46	.71	2.20	2.14	2.17	3.06	2.77	2.79	3.05	1.21	.92	.47
23	.45	.70	4.75	3.00	1.88	2.76	2.74	2.39	2.60	2.10	.80	.68
24	4.65	1.22	4.56	2.68	1.52	2.67	2.40	2.24	2.39	1.28	.76	.65
25	4.05	1.10	3.74	3.17	1.32	2.62	2.34	2.66	2.81	1.06	.76	.50
26	2.71	.90	3.40	3.22	1.32	2.84	2.18	2.14	3.68	.98	.72	.44
27	2.10	.93	3.00	1.93	1.36	3.01	1.98	2.09	3.80	.90	.62	.43
28	1.83	.92	3.70	2.39	1.45	3.06	1.94	2.81	4.42	.84	.58	.42
29	1.66	.82	3.53	2.13	1.52	3.12	2.22	2.45	6.11	.85	.58	1.19
30	1.49	2.82	2.82	2.06	-------	3.30	2.50	2.97	4.76	.82	.54	10.24
31	1.38	-------	3.78	2.10	-------	2.90	-------	2.40	-------	.77	.50	-------

Note.—Stage-discharge relation Jan. 7-9, 23-26, 28, 29, Feb. 15-18 and 20-26 affected by ice.

Daily discharge, in second-feet, of Swatara Creek at Harpers, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	120	258	2,690	1,500	520	440	895	745	650	1,570	167	66
2	103	227	1,360	1,170	520	420	895	605	695	1,360	141	66
3	89	195	1,050	1,850	440	440	995	540	560	1,640	127	89
4	89	188	845	1,920	420	500	1,360	520	569	995	117	75
5	75	188	1,290	1,430	1,110	1,360	1,360	480	480	845	115	84
6	68	188	2,060	945	1,850	2,450	2,450	440	480	745	117	122
7	61	190	1,850	750	745	2,530	4,620	400	745	745	105	122
8	64	258	1,360	650	560	1,640	2,610	480	480	795	103	75
9	64	212	1,050	600	480	1,170	1,850	1,430	540	1,780	93	89
10	66	162	945	650	440	1,290	1,570	1,780	460	795	91	122
11	61	146	895	1,990	460	2,210	1,230	1,780	362	605	84	110
12	64	162	695	1,780	420	2,530	995	4,020	500	520	1,170	80
13	61	159	605	1,050	381	1,500	895	3,300	1,290	795	845	70
14	52	141	605	945	344	1,110	795	2,370	2,060	695	500	61
15	54	132	500	795	320	895	695	2,610	1,170	480	291	57
16	57	112	440	1,640	300	695	605	1,780	995	460	190	59
17	52	172	440	6,360	260	650	560	1,500	795	362	180	59
18	52	198	381	2,690	220	650	1,050	1,230	695	308	242	61
19	57	154	362	1,920	227	650	1,780	1,290	650	291	182	54
20	98	136	344	1,500	220	605	995	945	1,230	258	193	54
21	84	117	325	1,050	300	795	1,050	995	2,770	258	274	57
22	66	124	650	605	300	1,110	945	945	1,050	258	177	68
23	64	122	2,290	600	240	945	895	745	845	605	146	117
24	2,130	258	2,130	550	200	895	745	650	745	291	136	110
25	1,710	227	1,500	550	200	845	695	895	945	212	136	75
26	895	172	1,290	550	240	945	650	605	1,500	193	127	61
27	605	180	1,050	540	308	1,050	560	605	1,570	172	103	59
28	500	177	1,500	480	344	1,110	540	945	1,990	156	93	57
29	420	151	1,360	500	362	1,110	650	745	3,390	159	93	258
30	362	945	945	605	-------	1,230	795	1,050	2,290	151	84	7,640
31	325	-------	1,570	605	-------	995	-------	745	-------	139	75	-------

Note.—Discharge Jan. 7-9, 23-26, 28, 29, Feb. 15-18 and 20-26 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Little Swatara Creek near Pine Grove and Schuylkill River at Reading.

Monthly discharge of Swatara Creek at Harpers, for the year ending Sept. 30, 1924.

(Drainage area 334 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	2,130	52	276	0.826	0.95
November	945	112	202	.605	.68
December	2,690	325	1,110	3.32	3.83
January	6,360	480	1,250	3.74	4.31
February	1,850	200	439	1.31	1.41
March	2,530	420	1,120	3.35	3.86
April	4,620	540	1,190	3.56	3.97
May	4,020	400	1,200	3.59	4.14
June	3,390	362	1,080	3.23	3.60
July	1,780	139	599	1.79	2.06
August	1,170	75	210	.629	.73
September	7,640	54	336	1.01	1.13
The Year	7,640	52	754	2.26	30.67

OHIO BASIN

OHIO BASIN—STATION NO. 1

ALLEGHENY RIVER NEAR LARABEE

Location.—At single-span steel highway bridge on road to Corryville, about one mile south of Pennsylvania Railroad station at Larabee, McKean County.

Drainage Area.—545 square miles.

Records Available.—June 29, 1915, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read to hundredths twice daily by Elmer Leet and Pearl Austin.

Discharge Measurements.—Made from upstream side of bridge or by wading; during extremely high stages from railroad bridge about 200 feet downstream from gage.

Channel and Control.—The right bank is high and not subject to overflow. At a gage height of about 4 feet the river begins to overflow the left bank upstream from the bridge into a broad flat, where a part of the stream flow remains in storage until the river recedes. Bed is composed of gravel, stones and boulders. Low water control is the upper sill of an old timber dam about 60 feet downstream from the gage. The timber abutments are vertical and have the effect of a weir at low stages.

Extremes of Stage.—Maximum gage height during the year, estimated from hydrograph, 12.9 feet at 10 p. m. April 7; minimum, 0.52 foot at 5 p. m. August 13.

Ice.—Stage-discharge relation usually affected by ice.

Cooperation.—Station is maintained in cooperation with United States Engineer Office, Pittsburgh.

The following discharge measurement was made by J. M. Snavely: No. 22, May 24: Gage height, 5.42 feet; discharge, 1,150 second-feet.

Daily Mean Gage Height, in feet, of Allegheny River near Larabee, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.61	0.66	6.97	9.85	4.40	2.27	9.42	5.97	3.45	5.00	1.13	0.59
2	.61	.71	4.57	11.07	4.20	2.34	7.69	6.12	3.55	4.10	.90	.75
3	.60	.71	3.60	10.70	3.92	2.44	6.62	5.87	3.15	3.95	.79	1.54
4	.61	.71	2.99	11.09	3.58	2.55	6.62	7.29	3.11	4.00	.83	.97
5	.61	.71	3.27	9.93	4.28	4.98	6.95	6.67	2.80	4.70	.84	.75
6	.60	.70	4.89	7.12	6.90	7.10	9.24	6.32	2.61	4.80	.88	.85
7	.60	.73	7.62	6.80	4.70	5.92	12.16	5.57	2.58	6.10	.83	.82
8	.62	.84	7.92	6.44	3.89	4.71	12.41	5.15	2.30	8.56	.76	.85
9	.60	.90	7.84	5.60	3.65	4.17	11.46	7.22	2.57	9.49	.81	1.80
10	.59	.82	6.38	5.04	3.45	4.17	10.52	8.97	2.23	8.50	.76	3.02
11	.58	.73	6.18	9.12	3.37	3.97	8.97	8.87	1.97	6.85	.73	1.67
12	.61	.76	5.61	11.87	3.58	3.77	7.15	9.42	1.96	5.61	.73	1.48
13	.60	.73	5.22	11.17	2.86	3.39	6.57	10.88	1.93	6.05	.60	1.66
14	.60	.69	5.47	9.92	2.97	3.37	6.42	10.84	2.60	5.20	.59	1.52
15	.59	.65	4.38	7.45	3.31	3.00	6.17	10.48	2.04	4.15	.73	1.31
16	.58	.70	4.08	7.23	2.68	2.29	5.87	9.32	1.86	3.70	.70	1.09
17	.58	.74	3.76	11.19	2.81	2.16	5.42	7.82	1.77	3.18	.75	.91
18	.59	.80	3.47	11.90	2.71	2.41	6.10	7.12	1.65	2.76	.76	.81
19	.60	.75	3.34	10.23	2.50	2.68	8.66	8.80	1.51	2.43	.67	.73
20	.61	.73	3.15	7.95	2.47	2.24	8.47	8.26	1.42	2.20	.69	.69
21	.60	.71	2.91	5.74	2.47	2.70	8.27	7.21	1.74	1.98	.75	.69
22	.59	.71	3.23	5.62	2.71	2.74	8.82	6.11	1.86	1.86	.72	.74
23	.62	.77	6.46	7.10	2.67	3.35	9.22	5.91	1.46	1.98	.85	1.17
24	.67	.92	8.74	6.48	2.62	4.96	8.27	5.43	1.57	1.69	.99	1.02
25	.82	.92	8.83	5.92	2.37	4.67	7.22	6.00	2.44	1.44	.77	.81
26	.83	.97	7.21	4.88	2.22	4.57	6.27	5.00	4.19	1.39	.65	.75
27	.79	1.58	6.25	4.52	2.24	4.49	5.47	4.32	2.67	1.22	.69	.70
28	.76	1.75	6.35	4.51	2.28	4.99	5.17	4.40	3.00	1.14	.80	.73
29	.66	1.36	6.18	4.54	2.29	7.99	5.02	4.45	6.63	.97	.78	4.72
30	.67	4.27	5.22	4.70	-------	10.32	5.12	3.95	6.01	.76	.66	11.83
31	.63	-------	5.05	5.47	-------	10.51	-------	3.55	-------	.95	.62	-------

Note.—Stage-discharge relation Jan. 22-26 and Feb. 9 to Mar. 3 affected by ice.

OHIO BASIN—STATION NO. 2

BROKENSTRAW CREEK AT YOUNGSVILLE

Location.—At single-span steel highway bridge, Youngsville, Warren County.

Drainage Area.—290 square miles.

Records Available.—October 22, 1909, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by William L. York. Elevation of gage zero 1,188.92 feet, United State Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Banks are high and not subject to overflow. Bed is composed of silt, clay and gravel. Control is at the first of a series of riffles, extending from 300 to 500 feet downstream from the gage; may shift occasionally.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 8.6 feet at 4 p. m. January 11 (discharge, about 8,200 second-feet); minimum, —0.24 foot at 5.30 p. m. September 1 (discharge, 48 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined between 50 and 5,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

The following discharge measurement was made by R. J. Ferris: No. 44, September 25: Gage height, 0.20 foot; discharge, 137 second-feet.

Daily Mean Gage Height, in feet, of Brokenstraw Creek at Youngsville, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	—0.14	0.06	1.98	3.82	1.32	0.45	2.94	1.92	0.73	0.83	0.07	—0.23
2	— .15	.02	1.40	3.31	1.20	.40	1.63	1.61	.67	.77	.08	.13
3	— .14	—.03	1.07	3.63	1.24	.37	1.69	1.54	.63	.60	—.05	.65
4	— .11	—.02	.82	3.15	1.09	.53	1.65	2.28	.71	.42	—.13	.47
5	— .12	.02	1.27	2.19	2.04	2.06	1.74	1.77	.64	.51	.03	.27
6	— .12	.04	3.57	1.47	3.23	2.52	2.62	1.46	.49	.52	.36	.35
7	— .13	.12	4.90	1.46	2.69	2.50	2.80	1.18	.43	.53	.48	.35
8	— .14	.34	4.35	1.39	2.08	1.83	2.43	1.70	.50	.57	.41	.23
9	— .15	.27	3.21	1.31	1.75	1.47	1.74	4.89	.49	.36	.25	.64
10	— .14	.15	2.50	1.35	-------	1.29	1.62	6.24	.43	.24	.15	1.18
11	— .13	.08	2.16	7.20	.86	1.17	1.43	4.06	.39	.22	.01	1.16
12	— .13	.07	1.55	6.35	1.02	.98	1.24	2.72	.42	.18	—.01	.80
13	— .13	.06	1.54	4.08	.98	.95	1.40	2.85	.50	.23	—.05	1.14
14	— .13	.00	2.44	2.49	.82	.85	1.32	2.65	.57	.20	—.03	1.16
15	— .13	—.02	2.18	1.75	.72	.80	1.21	2.22	.58	.13	—.01	.80
16	— .13	.02	1.43	2.99	.53	.72	1.16	1.68	.37	.09	.16	.59
17	— .13	—.01	1.23	4.98	.56	.60	.92	1.58	.27	.06	.16	.44
18	— .13	.03	1.12	3.97	.50	.64	2.15	1.61	.20	.03	.11	.30
19	.12	.04	.91	2.70	.45	.76	3.28	2.08	.21	.00	—.01	.26
20	— .11	.02	.82	1.78	.40	.78	2.61	1.87	.19	—.02	—.02	.22
21	— .13	.01	.89	.88	.32	.92	2.13	1.43	.35	—.04	—.02	.34
22	— .08	.08	1.29	.88	.34	1.04	3.14	1.15	.38	—.02	.03	.48
23	— .11	.15	1.95	1.00	.46	1.57	3.39	1.03	.26	.01	.82	.49
24	— .03	.31	2.71	.88	.64	2.30	2.40	1.18	.19	.04	.59	.30
25	— .02	.28	1.66	.87	.86	3.09	1.62	1.43	1.07	.05	.31	.20
26	.00	.35	1.52	1.00	.61	3.02	1.33	1.30	1.60	.05	.07	.10
27	.03	.71	1.38	.97	.43	2.67	1.20	1.16	1.25	.06	—.01	.05
28	— .03	.66	2.35	1.10	.42	2.62	.93	1.01	.86	.04	—.06	.03
29	— .03	.43	2.92	.89	.45	3.98	.87	.97	1.80	.06	—.13	4.08
30	— .02	1.84	2.39	1.03	-------	5.05	.94	.86	1.05	—.03	—.16	6.63
31	.05	-------	2.22	1.36	-------	4.39	-------	.84	-------	.06	—.18	-------

Note.—Stage-discharge relation Jan. 22-28, Feb. 3, 12-15 and Feb. 23 to Mar. 2 affected by ice. Gage height Feb. 10 not observed.

Daily discharge, in second-feet, of Brokenstraw Creek at Youngsville, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	63	105	920	2,240	545	160	1,510	860	319	358	108	49
2	62	95	595	1,820	500	170	695	695	282	319	110	122
3	63	84	438	2,060	420	191	745	645	282	205	80	282
4	68	86	338	1,740	458	248	695	1,100	300	206	65	221
5	67	95	522	1,040	920	980	745	800	282	230	98	161
6	67	100	2,060	620	1,740	1,230	1,300	620	227	230	188	185
7	65	120	3,300	620	1,370	1,230	1,440	500	209	248	224	185
8	63	182	2,800	595	980	800	1,160	745	230	248	203	149
9	62	161	1,740	545	800	620	745	3,300	227	188	155	282
10	63	128	1,230	570	579	545	695	4,820	209	152	128	500
11	65	110	1,040	6,170	358	479	620	2,510	197	146	92	479
12	65	108	695	5,080	300	418	522	1,370	206	135	88	338
13	65	105	645	2,510	280	398	595	1,440	230	149	80	479
14	**65**	**90**	**1,160**	**1,230**	**260**	**358**	**545**	**1,300**	**248**	**140**	**84**	**479**
15	65	86	1,040	800	240	338	500	1,040	265	122	88	338
16	65	95	620	1,580	248	300	479	745	191	112	130	265
17	65	88	522	3,410	248	265	378	695	161	105	130	212
18	65	98	458	2,420	230	282	1,040	695	140	98	118	197
19	120	100	378	1,370	215	319	1,820	980	143	90	88	158
20	68	95	338	800	200	338	1,300	860	138	86	86	146
21	65	92	378	378	176	378	980	620	185	82	86	182
22	74	110	545	340	182	438	1,660	479	194	86	98	224
23	68	128	920	320	170	695	1,900	438	158	92	338	227
24	84	173	1,370	300	160	1,100	1,160	500	138	100	265	170
25	86	164	745	300	160	1,660	695	620	438	102	173	140
26	90	185	645	300	160	1,580	570	545	695	102	108	115
27	98	200	595	300	160	1,370	500	479	522	105	88	102
28	84	282	1,160	320	160	1,300	398	418	358	100	78	98
29	84	209	1,510	378	160	2,420	358	398	800	105	65	2,510
30	86	800	1,160	438	-------	3,410	398	358	438	84	60	5,340
31	102	-------	1,040	570	-------	2,800	-------	358	-------	105	56	-------

Note.—Discharge Jan. 22-28, Feb. 3, 12-15 and Feb. 23 to Mar. 2 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Oil Creek near Rouseville. Discharge Feb. 10 interpolated, because of no gage height record.

Monthly discharge of Brokenstraw Creek at Youngsville, for the year ending Sept. 30, 1924.
(Drainage area 290 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	120	62	73.3	0.253	0.29
November	800	84	152	.524	.58
December	3,300	338	997	3.44	3.97
January	6,170	300	1,330	4.59	5.29
February	1,740	160	427	1.47	1.58
March	3,410	160	865	2.98	3.44
April	1,900	358	872	3.01	3.36
May	4,820	358	998	3.44	3.97
June	695	138	280	.966	1.08
July	358	82	151	.521	.60
August	338	56	121	.417	.48
September	5,340	49	478	1.65	1.84
The Year	6,170	49	564	1.94	26.48

OHIO BASIN—STATION NO. 3

TIONESTA CREEK AT NEBRASKA

Location.—At single-span steel highway bridge, Nebraska, Forest County, on road to Newmansville, about one-third of a mile downstream from the mouth of Coon Creek.

Drainage Area.—473 square miles.

Records Available.—October 24, 1909, to September 30, 1912, and August 5, 1923, to September 30, 1924. Records prior to August 5, 1923, are contained in the Report of Flood Commission, Pittsburgh, Pennsylvania.

Gage.—Standard chain attached to downstream side of bridge; read to hundredths twice daily by Richard McKee and Gerould Klinestiver. Elevation of gage zero 1,077.78 feet.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—The left bank is high and not subject to overflow; right is of medium height and overflows during extremely high stages. Bed is composed of gravel and rock; probably permanent. Control is the sill of an old dam a few hundred feet downstream from the gage.

Extremes of Stage.—Maximum gage height during the year, 12.70 feet observed at 7.45 a. m. September 30; minimum, 4.01 feet at 6 p. m. October 8.

Ice.—Stage-discharge relation usually affected by ice.

Daily Mean Gage Height, in feet, of Tionesta Creek at Nebraska, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	4.15	4.42	7.16	9.92	6.04	5.86	8.37	7.65	5.74	7.40	4.46	4.14
2	4.10	4.44	6.13	8.48	5.82	5.68	7.70	7.24	5.82	6.70	4.36	4.62
3	4.09	4.34	5.68	9.35	5.78	5.63	7.31	7.02	5.70	6.25	4.28	5.18
4	4.11	4.30	5.42	9.15	5.72	5.60	7.07	8.51	5.59	6.03	4.40	4.70
5	4.15	4.36	5.78	8.12	6.23	6.58	7.02	7.94	5.44	6.02	4.62	4.56
6	4.08	4.38	9.02	7.28	7.62	7.47	8.19	7.43	5.40	5.70	4.63	4.69
7	4.04	4.60	10.17	6.92	7.03	7.14	9.12	7.15	5.24	5.62	4.53	4.70
8	4.03	4.82	8.12	6.80	6.59	6.60	8.33	7.50	5.26	5.52	4.50	4.62
9	4.12	4.80	7.60	6.48	6.42	6.28	7.82	9.59	5.30	5.42	4.48	4.95
10	4.31	4.62	7.84	6.45	6.18	6.04	7.74	9.05	5.11	5.30	4.48	6.84
11	4.16	4.50	7.42	10.11	6.60	5.86	7.19	8.30	5.08	5.14	4.45	5.43
12	4.13	4.48	7.05	10.51	6.08	5.72	6.87	8.62	5.12	5.06	4.40	4.98
13	4.24	4.44	6.78	-------	5.93	5.59	6.73	8.55	5.18	5.32	4.30	5.32
14	4.14	4.37	6.93	7.72	6.03	5.57	6.60	8.25	5.40	5.60	4.30	5.88
15	4.24	4.40	6.35	7.10	6.01	5.60	6.44	8.12	5.16	5.18	4.34	5.62
16	4.17	4.40	6.18	7.98	6.00	5.52	6.30	7.64	5.15	5.03	4.34	5.02
17	4.14	4.44	6.03	9.98	5.88	5.30	6.10	7.28	5.14	4.92	4.49	4.89
18	4.06	4.45	5.88	8.59	5.16	5.46	6.91	7.45	5.00	4.90	4.50	4.80
19	4.20	4.49	5.76	7.74	5.82	5.52	8.29	8.38	4.94	4.75	4.35	4.70
20	4.28	4.42	5.56	7.36	5.78	5.50	7.60	7.65	4.88	4.70	4.38	4.70
21	4.26	4.38	5.52	6.56	5.74	5.54	7.44	7.30	4.99	4.66	4.42	5.05
22	4.30	4.32	5.93	6.04	6.06	5.68	8.12	6.95	5.02	4.58	4.43	5.15
23	4.23	4.44	7.22	6.40	6.14	5.87	8.00	6.67	4.88	4.72	4.90	5.05
24	4.26	4.78	7.40	6.08	6.15	6.75	7.52	6.70	4.94	4.57	4.90	4.75
25	4.41	4.92	7.11	6.02	6.36	7.13	7.24	7.04	5.70	4.58	4.58	4.72
26	4.52	4.85	6.68	5.50	6.54	7.14	6.93	6.64	6.81	4.59	4.39	4.60
27	4.34	5.62	6.38	5.48	6.28	7.13	6.60	6.42	5.90	4.54	4.29	4.65
28	4.36	5.55	6.92	5.60	6.12	7.74	6.40	6.43	5.90	4.49	4.25	4.58
29	4.35	5.10	7.00	5.66	6.02	9.31	6.38	6.26	10.55	4.50	4.30	8.14
30	4.38	6.25	6.68	5.88	-------	10.78	6.38	6.23	8.42	4.48	4.32	12.62
31	4.38	-------	7.30	6.24	-------	9.34	-------	6.01	-------	4.48	4.16	-------

Note.—Gage height Jan. 13 not observed. Stage-discharge relation Jan. 23-25 and Feb. 11 to Mar. 3 affected by ice.

OHIO BASIN—STATION NO. 4

OIL CREEK NEAR ROUSEVILLE

Location.—At two-span steel highway bridge, one-half mile downstream from Rouseville, Venango County.

Drainage Area.—330 square miles.

Records Available.—October 20, 1909, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by Mrs. Lenna Copeland.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Left bank is high and not subject to overflow; right becomes inundated at a stage of about 9.2 feet. Bed is composed of gravel and boulders. Control is the first of a series of riffles extending from 250 to 450 feet downstream from the gage; practically permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 6.1 feet at 10 p. m. January 11 (discharge, 9,180 second-feet); minimum, 0.60 foot on October 2 (discharge, 40 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined between 50 and 10,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

Daily Mean Gage Height, in feet, of Oil Creek near Rouseville, for the year ending Sept. 30. 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.62	0.72	2.08	2.92	1.79	1.27	2.41	2.11	1.34	1.68	0.76	0.78
2	.60	.68	1.50	2.22	1.80	1.15	2.07	1.79	1.33	1.46	.75	.83
3	.62	.68	1.28	2.86	1.60	1.13	1.98	1.73	1.31	1.31	.72	1.02
4	.62	.66	1.19	2.81	1.58	1.22	2.01	2.35	1.33	1.25	.72	.82
5	.63	.75	1.43	2.27	2.17	2.11	1.79	1.99	1.29	1.31	.87	.83
6	.67	.79	3.02	1.86	3.15	2.40	2.27	1.83	1.24	1.26	.96	.78
7	.64	.78	4.05	1.81	2.32	2.20	2.31	1.69	1.21	1.17	.85	.82
8	.62	.81	2.56	1.75	1.91	1.80	2.00	2.13	1.22	1.12	.84	.81
9	.62	.94	2.11	1.68	1.73	1.74	1.89	3.87	1.23	1.08	.81	1.08
10	.62	.82	2.37	1.63	1.68	1.67	1.97	3.31	1.17	1.05	.80	1.50
11	.64	.79	1.97	4.21	1.54	1.60	1.81	2.61	1.09	.99	.79	1.21
12	.64	.74	1.72	4.46	1.56	-------	1.67	2.56	1.09	.95	.78	1.04
13	.64	.73	1.67	2.79	1.43	1.43	1.71	2.85	1.09	1.20	.78	1.65
14	.64	.72	2.39	2.19	1.32	1.35	1.55	2.46	1.11	1.11	.77	1.46
15	.64	.72	1.88	1.82	1.35	1.32	1.52	2.47	1.08	1.01	.76	1.18
16	.64	.72	1.59	2.62	1.62	1.26	1.45	2.19	1.02	1.01	.74	1.06
17	.64	.74	1.50	4.11	1.33	1.14	1.39	2.02	1.01	.97	.78	.98
18	.64	.75	1.43	2.92	1.32	1.26	2.18	2.13	.97	.96	.78	.93
19	.64	.78	1.36	2.23	-------	1.34	2.95	2.28	1.00	.92	.74	.89
20	.64	.78	1.30	2.04	1.37	1.36	2.28	1.98	.96	.87	.83	.88
21	.64	.77	1.34	-------	1.44	1.55	2.06	1.80	1.00	.84	.82	.94
22	.66	.75	1.96	1.66	1.40	1.56	2.61	1.71	.95	.81	.78	1.05
23	.64	.77	2.36	1.71	1.31	1.91	2.27	1.60	.99	.86	1.54	1.06
24	.65	.90	2.43	1.57	1.20	2.72	1.97	1.71	.93	.83	1.04	.95
25	.82	.90	1.79	1.54	1.20	2.75	1.88	1.87	1.50	.81	.88	.90
26	.78	1.03	1.62	-------	-------	2.49	1.74	1.65	1.70	.84	.81	.88
27	.72	1.52	1.63	1.49	1.16	2.49	1.61	1.60	1.28	.82	.77	.84
28	.70	1.19	2.37	-------	1.14	2.76	1.52	1.55	1.30	.81	.73	.81
29	.70	1.04	2.26	1.64	1.19	3.38	1.51	1.52	3.10	.76	.71	2.94
30	.68	1.66	1.94	2.11	-------	3.88	1.54	1.46	2.15	.76	.70	4.82
31	.74	-------	2.22	1.83	-------	2.91	-------	1.39	-------	.78	.68	-------

Note.—Gage height Jan. 21, 26, 28, Feb. 19, 26 and Mar. 12 not observed. Stage-discharge relation Jan. 23-31 and Feb. 16-23 affected by ice.

Daily discharge, in second-feet, of Oil Creek near Rouseville, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	43	54	860	2,040	560	213	1,250	860	245	480	64	67
2	40	51	335	980	560	168	805	560	240	311	62	76
3	43	51	217	1,960	405	160	750	520	230	230	57	124
4	43	48	182	1,870	405	193	750	1,180	240	205	57	74
5	44	62	293	1,040	920	860	560	750	221	230	84	76
6	50	68	2,210	605	2,580	1,250	1,040	605	201	209	107	67
7	46	67	4,200	560	1,110	980	1,110	480	189	174	80	74
8	43	72	1,480	520	650	560	750	920	193	157	78	72
9	43	101	860	480	520	520	650	3,900	197	144	72	144
10	43	74	1,180	442	480	442	700	2,770	174	134	70	335
11	46	68	700	4,640	370	405	560	1,550	147	115	68	189
12	46	60	480	5,330	370	335	442	1,480	147	104	67	131
13	46	59	442	1,870	293	293	480	1,960	147	185	67	442
14	46	57	1,250	980	235	250	370	1,320	154	154	65	311
15	46	57	650	560	250	235	335	1,320	144	121	64	178
16	46	57	405	1,550	220	209	305	980	124	121	60	137
17	46	60	335	4,420	220	164	270	750	121	110	67	112
18	46	62	293	2,040	200	209	980	920	110	107	67	98
19	46	67	255	1,040	200	245	2,120	1,110	118	96	60	88
20	46	67	225	805	200	255	1,110	750	107	84	76	86
21	46	65	245	605	200	370	805	560	118	78	74	101
22	48	62	700	442	200	370	1,550	480	104	72	67	134
23	46	65	1,180	380	180	650	1,040	405	115	82	370	137
24	47	90	1,320	340	185	1,710	700	480	98	76	131	104
25	74	90	560	300	185	1,790	650	605	405	72	86	90
26	67	128	405	280	185	1,400	520	442	480	78	72	86
27	57	335	442	280	171	1,400	405	405	217	74	65	78
28	54	182	1,180	280	164	1,790	335	370	225	72	59	72
29	54	131	1,040	280	182	2,970	335	335	2,390	64	56	2,120
30	51	442	700	300	-------	3,990	370	311	920	64	54	6,020
31	60	-------	980	380	-------	2,040	-------	270	-------	67	51	-------

Note.—Discharge estimated Jan. 21, Feb. 26 and Mar. 12, because of no gage height record, and Jan. 23-31 and Feb. 16-23, because of ice from weather records, study of gage height graph and comparison with similar studies for Allegheny River at Franklin.

Monthly discharge of Oil Creek near Rouseville, for the year ending Sept. 30, 1924.
(Drainage area 330 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	74	40	48.5	0.147	0.17
November	442	48	95.1	.288	.32
December	4,200	182	826	2.50	2.88
January	5,330	280	1,210	3.67	4.23
February	2,580	164	428	1.30	1.40
March	3,990	160	852	2.58	2.97
April	2,120	270	735	2.23	2.49
May	3,990	270	950	2.88	3.32
June	2,390	98	284	.861	.96
July	480	64	138	.418	.48
August	370	51	79.9	.242	.28
September	6,020	67	394	1.19	1.33
The Year	6,020	40	505	1.53	20.83

OHIO BASIN—STATION NO. 5

FRENCH CREEK AT KIMMEYTOWN

Location.—At single-span steel highway bridge, Kimmeytown, Erie County, about 4 miles upstream from the mouth of South Branch French Creek and about 5 miles north of Union City.

Drainage Area.—207 square miles.

Records Available.—May 16, 1910, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by Mrs. J. L. Carter. Elevation of gage zero 1,235.7 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Right bank begins to overflow at a stage of 8.2 feet; left is high and not subject to overflow. Bed is composed of gravel and boulders. Control for low water is at the first of a series of riffles extending from 10 to 60 feet downstream from the gage; probably shifts occasionally.

Extremes of Discharge.—Maximum stage during the year, 8.52 feet observed at 1.30 p. m. January 11 (discharge, 5,430 second-feet); minimum, 0.58 foot several days in October (discharge, 17 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve fairly well defined to 5,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results fair.

Discharge measurements of French Creek at Kimmeytown, during the year ending Sept. 30, 1924.

No.	Date	Made by	Gage height	Discharge
			Feet	Sec.-ft.
35	Oct. 19	R. J. Ferris	0.70	12.4
36	Sept. 25	do	1.00	68.0

Daily Mean Gage Height, in feet, of French Creek, at Kimmeytown, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.60	0.70	2.78	4.35	3.72	1.94	3.18	2.52	1.27	1.22	0.89	0.77
2	.62	.73	2.17	3.06	3.97	2.11	2.57	2.28	1.23	1.17	.82	.89
3	.59	.72	1.74	3.52	3.66	1.95	2.45	1.90	1.20	1.06	.79	1.34
4	.58	.74	1.52	3.37	3.39	2.00	2.82	2.17	1.43	1.12	.74	1.15
5	.61	.74	2.10	2.74	3.96	3.15	2.82	1.87	1.50	2.16	1.35	.98
6	.60	.74	4.48	2.01	4.78	3.56	3.30	1.73	1.37	1.79	1.45	1.06
7	.62	.78	6.82	2.46	3.84	3.43	3.54	1.63	1.23	1.47	1.46	1.18
8	.60	.90	4.04	2.61	3.07	2.71	2.72	2.05	1.16	1.13	1.32	1.05
9	.60	.97	3.23	2.42	2.64	2.44	2.32	4.58	1.18	1.06	1.10	1.49
10	.61	.87	2.92	2.12	2.18	2.28	2.41	4.36	1.14	.99	.97	2.47
11	.59	.84	2.34	7.02	2.12	2.05	2.15	3.16	1.11	.97	.96	2.25
12	.58	.84	1.99	5.89	2.00	1.95	1.92	2.71	1.24	.90	.84	1.73
13	.60	.84	2.77	3.83	1.89	1.88	1.90	3.85	1.36	1.29	.80	1.85
14	.60	.80	3.87	2.78	1.91	1.86	2.32	3.70	1.56	1.42	.91	1.96
15	.60	.79	2.81	2.41	1.76	1.83	2.38	3.84	1.25	1.07	.85	1.60
16	.60	.74	2.10	3.46	1.72	1.81	1.98	3.15	1.09	.96	.83	1.28
17	.61	.79	1.90	5.28	1.79	1.64	1.74	2.47	1.00	.94	.90	1.17
18	.58	.80	1.74	3.92	1.77	1.61	2.85	2.40	.94	1.09	.83	1.05
19	.64	.84	1.64	2.99	1.70	1.87	3.84	3.37	.92	1.05	.81	.97
20	.58	.82	1.68	2.40	1.68	1.88	3.17	2.74	.94	.92	.81	.93
21	.58	.82	2.24	-------	-------	2.06	2.80	2.17	1.17	.87	.81	.92
22	.58	.78	2.48	3.75	3.29	2.06	5.12	1.89	1.18	.81	.79	1.02
23	.58	.81	2.59	3.80	3.13	2.51	4.38	1.71	1.04	.89	.92	1.06
24	.70	.89	3.15	3.37	2.89	3.78	3.11	1.92	.92	.81	.93	.96
25	.72	.93	2.64	3.07	2.59	4.29	2.57	2.42	1.45	.82	.89	.91
26	.64	.98	2.20	2.94	2.38	3.86	2.17	2.29	1.86	.82	.79	.86
27	.70	1.40	2.00	2.84	2.01	3.62	1.91	2.08	1.40	.81	.80	.86
28	.70	1.36	3.73	2.72	2.20	3.80	1.72	1.84	1.13	.77	.77	.91
29	.68	1.15	3.88	2.66	1.86	4.72	1.65	1.70	1.38	.75	.75	4.30
30	.67	2.18	2.93	2.99	-------	6.22	1.69	1.57	1.32	.76	.76	7.17
31	.70	-------	3.60	3.72	-------	4.32	-------	1.45	-------	.81	.73	-------

Note.—Stage-discharge relation Jan. 21 to Feb. 5, Feb. 14 to Mar. 4, Mar. 14-16 and 19-21 affected by ice. Gage height Jan. 21 and Feb. 21 not observed.

Daily discharge, in second-feet, of French Creek at Kimmeytown, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	26	620	1,510	550	110	790	505	128	115	53	36
2	20	30	382	745	500	110	540	435	118	104	43	54
3	17	29	260	950	480	120	488	305	110	82	39	145
4	17	32	185	895	500	220	620	382	168	94	32	100
5	19	32	365	580	950	790	620	290	185	382	148	67
6	18	32	1,580	335	1,790	1,010	840	260	152	275	172	82
7	20	37	3,510	488	1,130	895	950	230	118	178	175	106
8	18	55	1,250	540	745	580	580	350	102	96	140	80
9	18	66	790	470	540	488	435	1,650	106	82	90	182
10	19	50	660	365	400	435	470	1,510	98	68	66	488
11	17	46	452	3,710	365	350	382	790	92	66	64	418
12	17	46	335	2,690	335	320	305	580	120	55	46	260
13	18	46	620	1,130	305	305	305	1,130	150	132	40	290
14	18	40	1,190	620	280	260	435	1,070	200	165	56	320
15	18	39	620	470	240	240	470	1,130	122	84	48	215
16	18	32	365	950	220	240	335	790	88	64	44	130
17	19	39	305	2,160	180	230	260	488	70	61	55	104
18	17	40	260	1,150	170	215	620	470	61	88	44	80
19	21	46	230	700	160	220	1,130	895	58	80	42	66
20	17	43	245	470	150	240	790	580	61	58	42	60
21	17	43	418	300	140	300	620	382	104	50	42	58
22	17	37	505	240	140	350	2,000	305	106	42	39	74
23	17	42	540	220	120	505	1,510	235	78	54	58	82
24	26	54	790	200	120	1,130	745	305	58	42	60	64
25	29	60	540	180	120	1,440	540	470	172	43	54	56
26	21	67	400	170	120	1,190	382	435	290	43	39	49
27	26	160	335	160	110	1,010	305	365	160	42	40	49
28	26	150	1,070	160	110	1,130	245	290	96	36	36	56
29	24	100	1,190	170	110	1,720	230	245	155	33	33	1,440
30	24	400	660	400	-------	2,960	245	200	140	34	34	3,920
31	26	-------	1,010	600	-------	1,440	-------	172	-------	42	30	-------

Note.—Discharge Jan. 21 to Feb. 5, Feb. 14 to Mar. 4, Mar. 14-16 and 19-21 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for French Creek at Saegertown.

Monthly discharge of French Creek at Kimmeytown, for the year ending Sept. 30, 1924.

(Drainage area 207 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	29	17	19.9	0.096	0.11
November	400	26	64.0	.309	.34
December	3,510	185	699	3.38	3.90
January	3,710	160	767	3.71	4.28
February	1,790	110	382	1.85	2.00
March	2,960	110	663	3.20	3.69
April	2,000	230	606	2.93	3.27
May	1,650	172	557	2.69	3.10
June	290	58	122	.589	.66
July	382	33	90.0	.435	.50
August	175	30	61.5	.297	.34
September	3,920	36	304	1.47	1.64
The Year	3,920	17	362	1.75	23.83

OHIO BASIN—STATION NO. 6

FRENCH CREEK AT SAEGERTOWN

Location.—At single-span steel highway bridge, at lower end of Saegertown, Crawford County, about one-half mile upstream from the mouth of Woodcock Creek.

Drainage Area.—586 square miles.

Records Available.—April 23, 1921, to September 30, 1924. Discharge measurements have been made at the station since August 5, 1915.

Gage.—Standard chain attached to upstream side of bridge; read by Frank L. Peters.

Discharge Measurements.—Made from upstream side of bridge or by wading.

Channel and Control.—Right bank becomes inundated at a stage of 13 feet; left is high and not subject to overflow. Bed is composed of gravel and boulders. Control is at a riffle, about 700 feet downstream from the gage, at the head of an island; probably permanent.

Extremes of Discharge.—Maximum stage during the year, 11.30 feet observed at 5 p. m. January 12 (discharge, about 10,600 second-feet); minimum, 2.16 feet at 5 p. m. October 23 (discharge, 44 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined below 2,000 second-feet and fairly well defined between 2,000 and 9,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

Discharge measurements of French Creek at Saegertown, during the year ending Sept. 30, 1924.

No.	Date	Made by	Gage height	Discharge
			Feet	Sec.-ft.
23	Oct. 19	R. J. Ferris	2.22	49.4
24	Sept. 23	do	2.98	319

Daily Mean Gage Height, in feet, of French Creek at Saegertown, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.23	2.42	4.90	6.90	7.46	3.43	6.14	4.48	3.20	3.52	2.47	2.40
2	2.21	2.39	4.35	5.92	7.19	3.39	5.00	4.45	3.14	3.27	2.51	2.62
3	2.20	2.37	3.71	6.50	6.80	3.18	4.72	3.97	3.12	3.04	2.50	2.88
4	2.21	2.38	3.56	6.76	6.40	3.33	4.74	4.40	3.32	3.00	2.43	2.93
5	2.21	2.40	3.70	5.42	7.02	4.72	4.70	4.25	3.30	3.85	2.61	2.79
6	2.21	2.43	5.63	4.00	7.68	5.82	4.90	3.77	3.29	3.92	3.06	2.69
7	2.19	2.47	7.80	3.94	7.15	5.80	5.04	3.60	3.16	3.48	3.01	2.77
8	2.19	2.56	8.31	4.28	5.78	5.02	4.95	3.91	3.05	3.13	3.06	2.82
9	2.20	2.66	6.49	4.19	4.78	4.58	4.52	7.43	3.08	3.08	2.96	2.99
10	2.22	2.64	5.72	4.17	4.42	4.35	4.55	7.96	3.04	2.96	2.83	3.87
11	2.21	2.56	4.90	8.60	4.15	4.26	4.26	6.48	2.97	2.84	2.70	4.13
12	2.21	2.49	4.26	10.96	4.08	4.04	3.94	5.77	3.08	2.80	2.66	3.65
13	2.20	2.47	4.65	9.55	3.92	3.85	3.76	6.40	3.08	3.23	2.60	3.51
14	2.23	2.45	6.28	6.21	3.75	3.78	3.82	6.24	3.13	3.32	2.52	3.99
15	2.22	2.43	5.58	4.76	3.73	3.65	4.08	6.32	3.12	3.08	2.48	3.57
16	2.19	2.36	4.54	5.64	3.44	3.62	3.86	5.69	2.95	2.84	2.47	3.25
17	2.21	2.42	4.08	8.24	3.46	3.48	3.60	4.98	2.84	2.74	2.52	3.07
18	2.20	2.44	3.82	7.87	3.45	3.56	4.22	4.45	2.78	2.70	2.50	2.91
19	2.20	2.44	3.65	6.05	3.48	3.65	6.02	5.08	2.72	2.73	2.47	2.82
20	2.20	2.44	3.56	4.92	3.17	3.80	5.48	4.88	2.68	2.71	2.47	2.78
21	2.19	2.44	3.82	3.75	3.02	4.00	5.23	4.37	2.64	2.64	2.48	2.74
22	2.17	2.44	4.80	3.50	3.09	4.12	6.50	3.91	2.78	2.60	2.44	2.83
23	2.17	2.45	5.38	6.31	3.39	4.70	7.30	3.66	2.81	2.56	2.61	2.92
24	2.24	2.55	5.81	7.21	3.55	5.89	5.92	3.65	2.80	2.57	2.83	2.82
25	2.20	2.61	5.21	6.84	3.60	6.58	4.88	4.16	3.21	2.52	2.61	2.76
26	2.39	2.67	4.61	6.41	3.40	6.42	4.40	4.14	3.95	2.52	2.51	2.67
27	2.39	3.04	4.39	6.32	3.35	6.18	3.98	3.98	3.55	2.53	2.47	2.58
28	2.29	3.20	5.58	6.21	3.53	6.00	3.76	3.74	3.85	2.47	2.42	2.64
29	2.31	3.00	6.32	6.20	3.51	6.65	3.59	3.57	5.22	2.46	2.37	6.09
30	2.36	3.65	5.51	6.79	-------	7.94	4.12	3.43	4.30	2.45	2.40	9.06
31	2.38	-------	5.19	7.76	-------	8.22	-------	3.32	-------	2.46	2.39	-------

Note.—Stage-discharge relation Jan. 23 to Feb. 3, Feb. 14-20 and Feb. 23 to Mar. 3 affected by ice.

Daily discharge, in second-feet, of French Creek at Saegertown, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57	107	1,660	3,400	1,600	280	2,640	1,380	510	705	125	100
2	52	97	1,310	2,460	1,500	300	1,730	1,310	480	542	140	188
3	50	92	835	3,000	1,400	340	1,520	1,030	450	420	136	320
4	52	94	770	3,300	2,910	608	1,520	1,310	575	390	111	349
5	52	100	835	2,040	3,500	1,520	1,520	1,170	640	900	183	272
6	52	111	2,200	1,030	4,290	2,370	1,730	900	575	965	420	221
7	48	125	4,420	965	3,720	2,460	2,200	770	480	705	390	262
8	48	161	5,070	1,240	2,370	1,730	1,730	965	420	542	420	288
9	50	207	3,000	1,170	1,590	1,450	1,380	3,940	450	450	366	384
10	54	197	2,280	1,170	1,310	1,310	1,450	4,680	420	366	293	965
11	52	161	1,660	5,490	1,170	1,240	1,240	3,000	372	299	226	1,100
12	52	132	1,240	9,900	1,100	1,030	965	2,370	450	277	207	770
13	50	125	1,450	7,080	965	900	900	2,910	450	542	178	705
14	57	118	2,820	2,730	850	900	900	2,730	480	575	144	1,030
15	54	111	2,200	1,590	700	770	1,100	2,820	450	450	129	770
16	48	89	1,380	2,200	650	770	965	2,280	360	299	125	512
17	52	107	1,100	4,940	600	705	770	1,730	299	246	144	420
18	50	114	900	4,550	500	770	1,170	1,310	257	226	136	337
19	50	114	770	2,550	460	770	2,550	1,800	236	241	125	288
20	50	114	770	1,660	420	900	2,120	1,660	216	231	125	267
21	48	114	900	900	390	1,030	1,880	1,310	197	197	129	216
22	45	114	1,590	705	450	1,100	3,000	965	267	178	114	293
23	45	118	2,040	650	360	1,520	3,830	835	282	161	183	343
24	59	157	2,370	600	360	2,460	2,460	770	277	165	293	288
25	50	183	1,880	550	340	3,100	1,660	1,170	510	144	183	257
26	97	212	1,450	500	340	2,910	1,310	1,100	1,030	144	140	212
27	97	420	1,310	480	300	2,730	1,030	1,030	770	149	125	170
28	70	510	2,200	480	300	2,550	900	835	900	125	107	197
29	75	390	2,820	600	300	3,100	770	770	1,880	122	92	3,200
30	89	770	2,120	1,300	-------	4,550	1,100	672	1,240	118	100	6,260
31	94	-------	1,880	1,600	-------	4,940	-------	575	-------	122	97	-------

Note.—Discharge Jan. 23 to Feb. 3, Feb. 14-20, Feb. 23 to Mar. 3 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for French Creek at Carlton.

Monthly discharge of French Creek at Saegertown, for the year ending Sept. 30, 1924.

(Drainage area 586 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	97	45	58.0	0.099	0.11
November	770	89	182	.311	.35
December	5,070	770	1,850	3.16	3.64
January	9,900	480	2,280	3.89	4.48
February	4,290	300	1,200	2.05	2.21
March	4,940	280	1,650	2.82	3.25
April	3,830	770	1,600	2.73	3.05
May	4,680	575	1,620	2.76	3.18
June	1,880	197	531	.906	1.01
July	965	118	355	.606	.70
August	420	92	183	.312	.36
September	6,260	100	701	1.20	1.34
The Year	9,900	45	1,020	1.74	23.68

OHIO BASIN—STATION NO. 7

CUSSEWAGO CREEK NEAR MEADVILLE

Location.—At single-span steel highway bridge near Jones' Farm, about four and one-half miles northwest of Meadville, Crawford County.

Drainage Area.—88 square miles.

Records Available.—May 3, 1910, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by Thomas McCay. Elevation of gage zero 1,071.77 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Both banks are subject to overflow; the right becomes inundated at a stage of about 8.6 feet and the left at about 9.1 feet. Bed is composed of sand, gravel and boulders. Low-water control is a gravel bar 5 feet downstream from the gage; practically permanent. Control for medium and high stages is an old dam about 4 miles downstream from the station.

Extremes of Discharge.—Maximum stage during the year, 11.15 feet observed at 7 a. m. January 12 (discharge, about 1,200 second-feet); minimum, 0.48 foot at 6 p. m. October 3 (discharge, 1.3 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve fairly well defined below 900 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results fair.

The following discharge measurement was made by R. J. Ferris: No. 40, September 23: Gage height, 2.76 feet; discharge, 57.9 second-feet.

Daily Mean Gage Height, in feet, of Cussewago Creek near Meadville, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.50	0.94	4.81	6.92	7.56	2.57	7.85	3.71	2.04	6.92	0.83	0.61
2	.50	.92	4.55	7.44	7.52	2.52	5.22	4.10	1.92	4.70	.81	1.27
3	.49	.89	3.27	7.54	7.10	2.54	4.52	3.45	1.93	3.30	.79	1.66
4	.50	.88	2.70	7.55	6.26	3.08	4.70	4.15	2.84	2.92	.76	1.59
5	.50	.96	3.44	7.74	6.65	5.44	4.56	4.13	3.06	2.72	1.10	1.47
6	.52	1.06	6.31	7.38	9.26	7.48	4.60	3.28	2.52	2.86	1.10	1.47
7	.54	1.08	8.11	6.42	9.92	8.17	6.05	2.85	2.09	4.61	1.09	1.45
8	.54	1.24	9.40	5.66	9.13	8.52	5.30	3.17	1.88	6.53	1.06	1.40
9	.52	1.33	8.89	4.82	7.37	7.93	4,28	8.40	2.01	6.03	.94	1.77
10	.52	1.27	7.62	4.70	5.14	6.07	4.44	10.24	2.12	4.12	.89	3.33
11	.52	1.19	6.41	9.27	4.26	4.88	4.36	9.26	1.91	3.02	.84	3.32
12	.52	1.07	4.84	10.86	4.12	4.64	3.54	8.08	1.78	2.68	.82	2.87
13	.52	1.02	4.56	9.70	3.94	4.48	3.10	7.10	1.66	3.77	.79	2.82
14	.54	.97	6.83	8.87	3.76	4.44	2.96	7.58	1.59	4.72	.76	3.43
15	.56	.92	7.68	7.18	3.59	4.45	2.93	7.66	1.50	3.29	.73	3.37
16	.57	.91	6.65	5.79	3.28	3.96	2.76	7.54	1.39	2.28	.73	2.46
17	.56	.94	4.27	8.56	3.12	3.38	2.48	6.06	1.28	1.86	.75	1.86
18	.58	.96	3.70	9.81	3.00	3.31	3.32	4.22	1.20	1.62	.72	1.64
19	.60	.99	3.40	8.55	2.92	3.61	6.08	4.65	1.13	1.45	.70	1.43
20	.56	.98	3.30	7.41	2.87	4.07	6.81	4.84	1.10	1.34	.71	1.31
21	.53	.98	3.74	5.28	2.77	4.32	5.18	3.83	1.05	1.24	.68	1.42
22	.52	.94	5.62	4.46	2.84	4.63	6.04	3.20	1.00	1.16	.68	1.94
23	.51	.99	7.12	3.90	2.92	5.81	7.70	2.78	1.00	1.12	.96	2.78
24	.65	1.12	7.57	3.59	2.88	7.23	8.01	2.77	.97	1.12	1.30	2.46
25	.74	1.28	7.72	3.41	2.78	7.14	5.36	3.56	1.78	1.06	1.15	1.84
26	.82	1.52	6.86	3.34	2.68	6.99	3.70	3.64	3.72	.99	.93	1.52
27	.90	2.24	5.11	3.19	2.62	6.86	3.14	3.23	3.08	.95	.80	1.33
28	.84	2.51	6.32	2.93	2.59	6.94	2.76	2.86	2.17	.91	.71	1.30
29	.80	2.08	7.57	2.96	2.58	7.02	2.92	2.64	6.70	.91	.67	7.06
30	.83	2.95	7.98	4.18	-------	7.80	2.72	2.42	7.60	.88	.62	10.28
31	.90	-------	6.56	6.38	-------	8.47	-------	2.22	-------	.85	.58	-------

Note.—Stage-discharge relation Jan. 5-8, 25-28 and Jan. 30 to Mar. 10 affected by ice.

Daily discharge, in second-feet, of Cussewago Creek near Meadville, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	6.0	175	352	190	42	485	109	34	352	4.4	2.1
2	1.4	5.7	163	422	200	42	199	133	29	169	4.1	12
3	1.4	5.2	87	437	160	42	157	92	30	87	3.9	22
4	1.4	5.1	58	453	150	50	169	139	64	67	3.5	20
5	1.4	6.3	92	260	160	70	163	133	77	58	9.0	17
6	1.5	8.2	285	150	260	220	163	87	50	64	9.0	17
7	1.6	8.6	538	160	600	360	257	64	35	163	8.8	16
8	1.6	12	785	190	500	340	206	82	29	305	8.2	15
9	1.5	14	686	181	220	240	145	592	32	257	6.0	24
10	1.5	12	453	169	150	200	151	970	35	133	5.2	87
11	1.5	11	295	765	130	181	151	765	29	72	4.5	87
12	1.5	8.4	175	1,130	100	163	97	538	26	58	4.2	64
13	1.5	7.4	163	849	90	157	77	379	22	115	3.9	62
14	1.6	6.5	340	686	75	151	70	453	20	169	3.5	92
15	1.8	5.7	469	393	65	151	70	469	18	87	3.2	92
16	1.8	5.5	316	241	60	127	60	437	15	42	3.2	48
17	1.8	6.0	145	629	60	92	50	265	13	28	3.4	30
18	1.9	6.3	109	872	60	87	87	139	11	20	3.1	22
19	2.0	6.8	92	629	55	103	265	163	9.6	16	2.9	16
20	1.8	6.7	87	422	55	133	340	175	9.0	14	3.0	13
21	1.6	6.7	109	206	50	145	199	121	8.0	12	2.7	16
22	1.5	6.0	227	157	50	163	257	82	7.0	10	2.7	30
23	1.5	6.8	379	121	50	241	469	62	7.0	9.4	6.3	62
24	2.4	9.4	453	103	48	393	520	60	6.5	9.4	13	48
25	3.3	13	469	85	46	379	213	103	26	8.2	10	28
26	4.2	18	352	70	46	365	109	103	109	6.8	5.8	18
27	5.4	40	193	65	44	352	77	82	77	6.2	4.0	14
28	4.5	50	285	65	44	352	60	64	36	5.5	3.0	13
29	4.0	35	453	70	44	365	67	56	328	5.5	2.6	379
30	4.4	70	520	75	-------	485	58	46	453	5.1	2.2	990
31	5.4	-------	316	130	-------	610	-------	38	-------	4.6	1.9	-------

Note.—Discharge Jan. 5-8, 25-28 and Jan. 30 to Mar. 10 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for French Creek at Saegertown, Oil Creek near Rouseville and Shenango River near Jamestown.

Monthly discharge of Cussewago Creek near Meadville, for the year ending Sept. 30, 1924.

(Drainage area 88 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	5.4	1.4	2.26	0.026	0.03
November	70	5.1	13.6	.155	.17
December	785	58	299	3.40	3.92
January	1,130	65	340	3.86	4.45
February	600	44	130	1.48	1.60
March	610	42	219	2.49	2.87
April	520	50	180	2.05	2.29
May	970	38	226	2.57	2.96
June	453	6.5	54.8	.623	.70
July	352	4.6	76.1	.865	1.00
August	13	1.9	4.88	.055	.06
September	990	2.1	78.5	.892	1.00
The Year	1,130	1.4	136	1.55	21.05

OHIO BASIN—STATION NO. 8

FRENCH CREEK AT CARLTON

Location.—At two-span steel highway bridge, Carlton, Mercer County.

Drainage Area.—1,000 square miles.

Records Available.—April 29, 1908, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by Charles Coefield. Elevation of gage zero 1,033.60 feet, United States Geological Survey datum.

Channel and Control.—Right bank is high and not subject to overflow; left is of medium height and overflow begins at a stage of about 10 feet. Bed is composed of sand, gravel and boulders. At low stages the flow is in several channels. Control is at a riffle at the measuring section; practically permanent.

Extremes of Discharge.—Maximum stage during the year, 10.0 feet at 9 a. m. January 13 (discharge, 12,700 second-feet); minimum, estimated from discharge of French Creek at Saegertown, 0.04 foot on October 23 (discharge, 74 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve fairly well defined below 3,000 second-feet and well defined between 3,000 and 13,000 second-feet. Gage read to hundredths twice daily; during high stages more frequently. Daily discharges ascertained by applying daily mean gage height to rating table. Results fair.

Cooperation.—Stations maintained in cooperation with United States Engineer Office, Pittsburgh.

Discharge measurements of French Creek at Carlton, during the year ending Sept. 30, 1924.

No.	Date	Made by	Gage height	Discharge
			Feet	Sec.-ft.
65	May 19	U. S. Army Engineers	4.0	3,090
66	July 23	do	1.24	484
67	Aug. 18	do	.88	202
68	Sept. 20	do	1.74	468
69	23	R. J. Ferris	1.83	602

Daily Mean Gage Height, in feet, of French Creek at Carlton, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-------	0.43	3.39	5.62	4.05	1.74	6.00	2.90	1.68	3.20	0.66	0.71
2	-------	.40	3.45	5.62	4.05	1.40	4.72	3.10	1.57	2.68	.60	1.05
3	-------	.40	2.58	5.65	3.78	1.47	3.80	2.82	1.49	2.21	.66	1.62
4	-------	.44	2.11	6.10	3.55	1.81	3.62	3.30	1.56	2.12	.60	1.67
5	-------	.46	2.28	4.75	4.33	3.40	3.58	3.30	1.84	2.60	1.00	1.62
6	-------	.49	4.04	3.25	7.35	4.68	3.65	2.64	1.75	3.20	1.22	1.47
7	-------	.51	6.58	2.97	6.68	5.17	4.40	2.35	1.48	2.75	1.00	1.31
8	-------	.60	7.05	2.90	6.21	4.54	4.10	2.89	1.38	2.57	1.50	1.30
9	-------	.67	6.65	3.35	4.73	3.88	3.50	7.40	1.31	2.38	1.40	1.77
10	-------	.68	5.35	3.20	4.15	3.60	3.45	8.22	1.32	2.13	1.32	2.50
11	-------	.58	4.50	7.99	3.11	3.32	3.24	7.38	1.29	1.87	1.17	3.08
12	-------	.58	3.62	9.38	2.92	3.02	2.80	5.87	1.20	1.64	1.10	2.80
13	-------	.54	3.33	9.85	2.72	2.80	2.49	5.80	1.20	2.55	1.05	2.95
14	-------	.44	4.80	7.27	2.47	2.62	2.48	5.82	1.20	2.60	.90	2.93
15	-------	.41	5.00	4.90	2.37	2.42	2.48	5.82	1.20	2.37	.82	2.80
16	-------	.40	3.95	5.13	2.00	2.13	2.45	5.35	1.16	2.00	.72	2.35
17	-------	.42	3.22	8.01	1.82	2.22	2.15	4.48	1.08	1.75	.82	2.08
18	-------	.42	2.77	8.40	1.80	2.15	2.67	3.88	1.00	1.60	.89	1.85
19	-------	.44	2.55	6.30	1.82	2.32	4.65	3.88	.92	1.50	.84	1.64
20	-------	.47	2.37	4.49	1.78	2.52	4.70	4.05	.83	1.41	.82	1.50
21	-------	.45	2.33	2.91	1.70	2.70	4.05	3.35	.70	1.30	.80	1.50
22	-------	.45	3.56	2.65	1.68	2.90	4.63	3.00	.70	1.18	.71	1.57
23	-------	.48	4.52	2.72	1.65	3.65	5.99	2.68	.85	1.19	1.46	1.80
24	-------	.55	4.85	2.97	2.68	4.55	5.30	2.36	.80	.96	1.30	1.73
25	-------	.61	4.60	2.65	2.42	5.28	3.98	2.76	1.54	.91	1.25	1.55
26	-------	.74	3.95	2.38	2.40	5.56	3.32	2.86	3.28	.89	1.03	1.43
27	-------	1.27	3.37	2.30	2.55	5.34	2.70	2.68	2.47	.82	.90	1.25
28	-------	1.64	4.28	2.01	1.88	5.20	2.42	2.27	2.11	.77	.85	1.38
29	-------	1.43	5.26	1.91	1.95	5.70	2.26	2.20	5.09	.70	.70	5.75
30	-------	1.95	4.80	2.50	-------	6.88	2.22	2.05	4.05	.70	.60	8.35
31	-------	-------	4.51	3.70	-------	7.13	-------	1.85	-------	.60	.60	-------

Note.—Station was not maintained in October. Stage-discharge relation Jan. 23-28 and Feb. 19 to Mar. 1 affected by ice.

Daily discharge, in second-feet, of French Creek at Carlton, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		149	2,150	4,690	2,760	550	5,260	1,700	780	1,970	226	244
2		140	2,150	4,690	2,760	590	3,540	1,880	680	1,540	205	400
3		140	1,460	4,690	2,550	620	2,550	1,620	650	1,140	226	710
4		152	1,060	5,410	2,350	850	2,350	2,060	680	1,060	205	745
5		158	1,220	3,660	3,090	2,150	2,350	2,060	885	1,460	375	710
6		167	2,760	1,970	7,500	3,540	2,350	1,460	815	1,970	475	620
7		174	6,170	1,790	6,330	4,160	3,200	1,300	650	1,620	710	530
8		205	6,820	1,700	5,560	3,310	2,870	1,700	590	1,460	650	530
9		230	6,170	2,150	3,540	2,650	2,250	7,500	530	1,300	590	815
10		233	4,420	1,970	2,980	2,350	2,150	8,910	530	1,060	530	1,380
11		198	3,310	8,550	1,880	2,060	1,970	7,500	530	885	450	1,880
12		198	2,350	11,300	1,700	1,790	1,620	5,110	475	745	425	1,620
13		184	2,060	12,200	1,540	1,620	1,380	4,970	475	1,460	400	1,790
14		152	3,660	7,330	1,380	1,460	1,380	4,970	475	1,460	325	1,700
15	97	143	3,900	3,780	1,300	1,300	1,380	4,970	475	1,300	289	1,620
16		140	2,760	4,030	990	1,060	1,300	4,420	450	990	248	1,300
17		146	1,970	8,550	850	1,140	1,140	3,310	425	815	289	1,060
18		146	1,620	9,270	850	1,140	1,540	2,650	375	710	320	885
19		152	1,460	5,710	800	1,220	3,420	2,650	335	650	298	745
20		161	1,300	3,310	700	1,380	3,540	2,760	289	590	289	650
21		155	1,220	1,700	650	1,540	2,760	2,150	240	530	280	650
22		155	2,350	1,460	650	1,700	3,420	1,790	240	475	244	680
23		164	3,310	1,300	600	2,350	5,260	1,540	302	475	620	850
24		188	3,660	1,100	600	3,420	4,290	1,300	280	355	530	815
25		208	3,420	1,000	600	4,290	2,760	1,620	680	330	502	680
26		256	2,760	950	550	4,690	2,060	1,700	2,060	320	400	620
27		502	2,150	900	550	4,290	1,540	1,540	1,380	289	325	502
28		745	3,090	850	550	4,160	1,300	1,220	1,060	268	302	590
29		620	4,290	920	550	4,830	1,220	1,140	4,030	240	240	4,970
30		955	3,660	1,380	-------	6,650	1,140	990	2,760	240	205	9,270
31		-------	3,310	2,450	-------	6,990	-------	885	-------	205	205	-------

Note.—Discharge Oct. 1-31 estimated, because station was not being maintained, from discharge of French Creek at Saegertown. Braced figures show mean discharge for the period included. Discharge Jan. 23-28 and Feb. 19 to Mar. 1 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for French Creek at Saegertown.

Monthly discharge of French Creek at Carlton, for the year ending Sept. 30, 1924.

(Drainage area 1,000 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October Estimated	162	75	97	0.097	0.11
November	745	140	244	.244	.27
December	6,820	1,060	2,970	2.97	3.42
January	12,200	850	3,900	3.90	4.50
February	7,500	550	1,960	1.96	2.11
March	6,990	550	2,580	2.58	2.97
April	5,260	1,140	2,440	2.44	2.72
May	8,910	885	2,880	2.88	3.32
June	4,030	240	804	.804	.90
July	1,970	205	900	.900	1.04
August	710	205	367	.367	.42
September	9,270	244	1,320	1.32	1.47
The Year	12,200	75	1,710	1.71	23.25

OHIO BASIN—STATION NO. 9

ALLEGHENY RIVER AT FRANKLIN

Location.—At four-span steel highway bridge, Eighth Street, Franklin, Venango County.

Drainage Area.—6,010 square miles.

Records Available.—April 1, 1905, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge in first span from left end; read by W. C. Rivers. Elevation of gage zero 958.26 feet, United States Geological Survey datum.

Discharge Measurements.—Made from upstream side of bridge.

Channel and Control.—Both banks are high and do not overflow until a stage of 22 feet is reached. Bed is composed of gravel and boulders. Control is at a riffle, 200 feet long, about 1,000 feet downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, 12.55 feet observed at midnight January 11-12 (discharge, 69,300 second-feet); minimum, —0.23 foot from 6 p. m. October 22 to 6 p. m. October 23 (discharge, 527 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined between 800 and 110,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

Cooperation.—Station is maintained in cooperation with United States Engineer Office, Pittsburgh.

Daily Mean Gage Height, in feet, of Allegheny River at Franklin, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	—0.03	0.12	3.41	6.68	9.10	1.77	7.56	3.85	2.44	4.12	0.72	0.45
2	— .03	.13	3.67	7.48	9.04	1.73	6.19	4.28	2.34	3.36	.62	.49
3	.00	.12	3.10	7.50	8.26	1.61	5.29	3.95	2.24	2.82	.54	.78
4	— .05	.11	2.46	8.06	6.34	1.72	4.63	4.57	2.21	2.54	.48	1.18
5	— .10	.15	2.33	6.97	5.16	2.70	4.59	5.13	2.20	2.44	.61	1.45
6	— .12	.18	4.32	5.81	5.52	4.19	5.13	4.55	2.13	2.38	.71	1.12
7	— .12	.25	7.73	4.59	6.10	5.01	7.33	3.91	1.98	2.34	.75	.99
8	— .14	.37	6.90	3.81	4.86	4.49	7.46	4.22	1.86	2.30	1.11	.94
9	— .16	.53	6.12	3.68	3.92	3.68	6.59	7.65	1.81	2.30	.98	1.17
10	— .18	.54	5.68	3.55	3.41	3.29	6.13	8.60	1.72	2.60	.89	1.83
11	— .19	.46	5.06	8.82	3.00	3.15	5.37	7.65	1.60	2.46	.81	2.73
12	— .20	.42	4.28	11.76	2.80	2.97	4.63	6.75	1.50	2.26	.73	2.41
13	— .20	.36	3.72	9.90	2.66	2.75	4.13	7.08	1.64	2.31	.62	2.43
14	— .20	.30	4.40	7.97	2.44	2.53	3.73	7.20	1.78	2.32	.53	2.81
15	— .18	.26	4.42	6.22	2.24	2.31	3.75	6.83	1.74	2.16	.45	2.77
16	— .18	.22	3.76	6.19	1.96	2.15	3.59	6.30	1.66	1.90	.38	2.19
17	— .19	.20	3.23	9.20	1.79	2.09	3.27	5.58	1.53	1.61	.47	1.80
18	— .20	.20	2.90	8.68	1.68	2.13	3.58	5.05	1.39	1.42	.46	2.51
19	— .21	.20	2.66	7.28	1.67	2.22	6.31	5.42	1.26	1.34	.45	1.32
20	— .21	.24	2.46	6.11	1.63	2.33	6.70	5.36	1.17	1.24	.47	1.16
21	— .22	.24	2.38	4.68	1.48	2.55	5.80	4.80	1.16	1.15	.47	1.14
22	— .22	.24	2.92	3.34	1.38	2.67	6.03	4.29	1.14	1.05	.42	1.25
23	— .23	.26	4.02	2.64	1.30	3.25	7.26	3.83	1.14	.98	1.23	1.41
24	— .10	.34	4.70	2.79	1.35	4.25	6.74	3.58	1.14	.89	1.46	1.34
25	— .08	.48	5.02	2.84	1.46	5.40	5.65	3.90	1.72	.80	1.90	1.18
26	— .03	.68	4.48	3.00	1.58	5.57	4.77	3.80	3.23	.76	1.32	1.03
27	.00	1.06	3.98	6.08	1.67	5.41	4.07	3.55	3.34	.68	.99	.91
28	.02	1.56	4.26	5.82	1.75	5.56	3.57	3.30	2.78	.62	.75	.83
29	.03	1.38	5.27	6.09	1.77	6.47	3.31	3.06	6.38	.56	.60	3.77
30	.04	1.79	5.06	6.55	-------	9.15	3.16	2.88	5.04	.56	.51	9.66
31	.10	-------	4.68	8.31	-------	8.87	-------	2.68	-------	.88	.41	-------

Note.—Stage-discharge relation Jan. 24 to Feb. 5 and Feb. 25 to Mar. 2 affected by ice.

Daily discharge, in second-feet, of Allegheny River at Franklin, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	762	930	10,800	28,200	11,000	3,800	33,600	12,500	6,890	13,800	1,850	1,420
2	762	998	12,100	33,000	11,000	4,200	25,200	14,800	6,530	10,800	1,660	1,500
3	800	930	9,600	33,000	10,000	4,180	19,800	13,300	6,180	8,420	1,580	2,020
4	738	930	7,260	37,000	9,500	4,500	16,300	16,300	6,180	7,260	1,500	2,980
5	675	998	6,530	30,000	15,000	8,030	16,300	18,800	6,180	6,890	1,660	3,720
6	651	1,060	14,800	22,800	21,000	14,300	18,800	16,300	5,840	6,800	1,830	2,720
7	651	1,130	34,200	16,300	24,600	18,300	31,800	12,900	5,500	6,530	1,970	2,470
8	627	1,270	29,400	12,500	17,800	15,800	33,000	14,300	5,160	6,530	2,720	2,350
9	603	1,580	24,600	12,100	12,900	12,100	27,600	33,600	4,830	6,530	2,470	2,850
10	580	1,580	22,200	11,700	10,800	10,400	24,600	40,500	4,500	7,640	2,230	4,830
11	569	1,420	18,800	41,000	9,200	10,000	20,400	33,600	4,180	7,260	2,020	8,030
12	558	1,350	14,800	62,900	8,420	9,200	16,200	28,800	3,870	6,530	1,920	6,890
13	558	1,270	12,100	49,600	8,030	8,420	13,800	30,600	4,180	6,530	1,660	6,890
14	558	1,200	15,300	36,300	6,890	7,260	12,100	31,200	4,830	6,530	1,580	8,420
15	580	1,130	15,300	25,200	6,180	6,530	12,500	28,800	4,500	6,180	1,420	8,420
16	580	1,060	12,500	25,200	5,500	6,180	11,700	25,800	4,500	5,160	1,350	6,180
17	569	1,060	10,000	44,700	4,830	5,840	10,400	21,600	3,870	4,180	1,420	4,830
18	558	1,060	8,810	41,200	4,500	5,840	11,700	18,300	3,560	3,560	1,420	3,870
19	547	1,060	8,030	31,800	4,500	6,180	25,800	20,400	3,120	3,410	1,420	3,260
20	547	1,130	7,260	24,600	4,180	6,530	28,200	20,400	2,850	3,120	1,420	2,850
21	537	1,130	6,890	16,800	3,870	7,640	23,400	17,300	2,850	2,850	1,420	2,850
22	537	1,130	8,810	10,400	3,560	8,030	24,000	14,800	2,850	2,600	1,350	3,120
23	527	1,130	13,300	7,640	3,260	10,000	31,800	12,500	2,850	2,470	3,120	3,560
24	675	1,270	16,800	7,000	3,410	14,300	28,200	11,700	2,850	2,230	3,720	3,410
25	700	1,500	18,300	6,000	3,200	20,400	21,600	12,900	4,500	2,020	5,160	2,980
26	762	1,830	15,800	5,000	3,200	21,600	17,300	12,500	10,000	1,920	3,260	2,600
27	800	2,600	13,300	4,800	3,400	20,400	13,800	11,700	10,400	1,830	2,470	2,200
28	800	4,180	14,800	4,800	3,600	21,600	11,700	10,400	8,420	1,660	1,920	2,120
29	865	3,560	19,800	4,800	3,800	27,000	10,400	9,600	26,400	1,580	1,660	12,500
30	865	4,830	18,800	5,000	-------	44,700	10,000	8,810	18,300	1,580	1,500	48,200
31	930	-------	16,800	6,500	-------	42,600	-------	8,030	-------	2,230	1,350	-------

Note.—Discharge Jan. 24 to Feb. 5 and Feb. 25 to Mar. 2 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Allegheny River at Red House and Kittanning.

Monthly discharge of Allegheny River at Franklin, for the year ending Sept. 30, 1924.

(Drainage area 6,010 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	930	527	660	0.110	0.13
November	4,830	930	1,540	.256	.29
December	34,200	6,530	14,800	2.46	2.84
January	62,900	4,800	22,500	3.74	4.31
February	24,600	3,200	8,180	1.36	1.47
March	44,700	3,800	13,100	2.18	2.51
April	33,600	10,000	20,100	3.34	3.73
May	40,500	8,030	18,800	3.13	3.61
June	26,400	2,850	6,220	1.03	1.15
July	13,800	1,580	5,060	.842	.97
August	5,160	1,350	2,000	.333	.38
September	48,200	1,420	5,670	.943	1.05
The Year	62,900	527	9,910	1.65	22.44

OHIO BASIN—STATION NO. 10

RED BANK CREEK AT SAINT CHARLES

Location.—At single-span steel railroad bridge, Saint Charles, Clarion County.

Drainage Area.—540 square miles.

Records Available.—October 19, 1909, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by Forest Bish and W. H. Bish. Elevation of gage zero 976.24 feet, United States Geological Survey datum.

Discharge Measurements.—Made from upstream side of bridge or by wading.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of rocks and fairly regular. Control is at the first of a series of riffles, where the bed is composed of large boulders and ledge, about 200 feet downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, 11.56 feet observed at 6 a. m. June 29 (discharge, about 18,500 second-feet); minimum, 0.96 foot several times in October (discharge, 46 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined below 1,000 second-feet and fairly well defined between 1,000 and 10,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

Daily Mean Gage Height, in feet, of Red Bank Creek at Saint Charles, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.10	1.05	3.28	-------	3.41	1.84	4.38	2.54	2.41	5.20	1.51	1.32
2	1.11	1.08	2.88	-------	3.28	1.78	3.90	2.42	2.41	4.22	1.42	1.33
3	1.13	1.06	2.50	-------	2.51	2.05	3.59	2.47	2.37	3.36	1.37	1.33
4	1.13	1.07	2.51	5.92	2.51	2.65	3.52	2.73	2.36	3.10	1.30	1.31
5	1.13	1.10	2.70	4.68	2.76	4.88	3.49	3.48	2.34	4.69	1.45	1.29
6	1.14	1.16	3.30	3.80	2.90	4.68	3.45	3.44	2.34	3.58	1.43	1.35
7	1.10	1.20	5.72	3.26	3.00	4.61	4.73	3.37	2.33	3.10	1.60	1.31
8	1.02	1.23	4.35	3.11	3.11	4.54	4.55	3.10	2.36	2.93	1.68	1.31
9	1.00	1.26	3.57	3.06	3.07	3.92	4.30	4.20	2.41	3.00	1.53	1.55
10	.97	1.25	4.97	2.76	2.97	3.02	4.28	5.10	2.49	3.54	1.43	2.61
11	.98	1.20	3.83	4.18	2.50	3.42	4.20	4.83	2.42	3.33	1.38	2.05
12	.97	1.24	3.45	4.67	2.32	3.39	4.12	5.31	2.34	2.87	1.35	1.82
13	.98	1.21	-------	4.28	2.24	3.32	4.02	4.90	2.26	4.02	1.27	1.66
14	.98	1.21	-------	3.78	2.23	3.21	3.72	4.50	2.21	3.85	1.23	1.60
15	.97	1.21	-------	3.00	2.29	3.17	3.40	3.62	2.22	3.06	1.25	1.51
16	1.00	1.20	-------	3.79	2.20	3.00	2.66	3.42	2.25	2.75	1.25	1.45
17	1.08	1.17	-------	4.45	2.00	2.78	2.60	3.15	2.24	2.41	1.21	1.41
18	1.08	1.08	-------	4.31	1.93	2.61	2.78	2.96	2.21	2.29	1.23	1.37
19	.98	.99	-------	4.10	1.98	2.55	3.16	4.39	2.18	2.15	1.19	1.30
20	.97	1.09	-------	3.91	1.98	2.52	3.28	4.50	2.17	1.99	1.78	1.31
21	1.01	1.12	2.50	3.71	1.87	2.58	3.48	4.20	2.18	1.91	1.54	1.47
22	1.02	1.13	3.08	3.58	1.88	2.76	4.00	3.80	1.69	1.82	1.92	2.54
23	1.03	1.13	3.18	3.35	1.91	3.08	4.30	3.68	1.67	1.85	2.71	2.70
24	1.05	1.15	4.32	3.31	1.92	4.32	3.98	3.48	1.74	1.76	2.51	2.29
25	1.08	1.16	4.41	3.28	1.99	4.25	3.68	2.88	2.45	1.67	2.44	2.21
26	1.07	1.18	-------	2.90	1.97	4.08	2.93	2.88	3.45	1.60	2.40	2.28
27	1.08	1.21	3.90	1.92	1.97	3.88	2.78	2.82	2.85	1.55	1.88	3.47
28	1.10	1.21	-------	1.86	2.02	4.22	2.71	2.58	3.20	1.50	1.72	3.88
29	1.07	1.23	4.08	2.00	1.92	5.50	2.61	2.48	9.69	1.44	1.54	4.85
30	1.07	1.25	-------	3.02	-------	5.05	2.57	2.46	8.00	1.43	1.48	7.16
31	1.05	-------	-------	3.40	-------	4.68	-------	2.42	-------	1.73	1.40	-------

Note.—Gage height Dec. 13-20, 26, 28 and Dec. 30 to Jan. 3 unsatisfactory. Stage-discharge relation Jan. 8, 9, 19-27, Jan. 31 to Feb. 2, Feb. 7 to Mar. 1, Mar. 7-9 and 11-19 affected by ice.

Daily discharge, in second-feet, of Red Bank Creek at Saint Charles, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	62	1,230	3,600	950	260	2,630	666	576	3,930	175	125
2	74	68	895	3,000	750	280	1,920	576	576	2,330	151	128
3	79	64	635	8,000	635	392	1,550	606	548	1,330	138	128
4	79	66	635	5,250	635	728	1,440	793	548	1,050	120	122
5	79	72	760	3,070	793	3,410	1,440	1,440	548	3,090	160	118
6	81	86	1,230	1,790	895	3,090	1,330	1,330	548	1,550	154	132
7	72	95	4,860	1,230	850	2,000	3,090	1,330	548	1,050	207	122
8	56	102	2,630	950	750	1,600	2,930	1,050	548	932	242	122
9	52	110	1,550	800	600	1,100	2,480	2,330	576	1,550	191	191
10	48	108	3,580	793	500	970	2,480	3,750	635	1,440	154	696
11	49	95	1,790	2,330	460	850	2,330	3,250	576	1,230	140	392
12	48	105	1,330	3,090	420	750	2,190	4,110	548	860	132	280
13	49	98	1,100	2,480	360	700	2,050	3,410	493	2,050	112	224
14	49	98	950	1,790	360	650	1,670	2,780	466	1,790	102	207
15	48	98	850	970	340	600	1,330	1,550	466	1,050	108	175
16	52	95	750	1,790	320	600	728	1,330	493	793	108	160
17	68	88	750	2,630	320	600	696	1,140	493	576	98	148
18	68	68	700	2,480	300	600	826	932	466	520	102	138
19	49	50	650	1,600	280	650	1,140	2,630	466	441	93	120
20	48	70	650	700	280	635	1,230	2,780	441	368	280	122
21	54	77	635	420	280	696	1,440	2,330	466	322	191	166
22	56	79	1,050	360	260	793	2,050	1,790	242	280	322	666
23	58	79	1,140	320	260	1,050	2,480	1,670	224	301	760	635
24	62	84	2,480	300	260	2,480	2,050	1,440	261	261	635	520
25	68	86	2,630	300	260	2,330	1,670	895	606	224	606	466
26	66	90	2,000	280	240	2,190	932	895	1,330	207	576	520
27	68	98	1,920	280	240	1,920	826	826	860	191	368	1,440
28	72	98	5,000	301	240	2,330	760	696	1,140	175	242	1,920
29	66	102	2,190	368	240	4,480	696	635	14,000	157	191	3,250
30	66	108	2,000	970	-------	3,580	666	606	9,770	154	169	7,970
31	62	-------	6,000	950	-------	3,090	-------	576	-------	261	145	-------

Note.—Discharge estimated Dec. 13-20, 26, 28 and Dec. 30 to Jan. 3, because of unsatisfactory gage height record, and Jan. 8, 9, 19-27, Jan. 31 to Feb. 2, Feb. 7 to Mar. 1, Mar. 7-9 and 11-19, because of ice, from weather records, study of gage height graph and comparison with similar studies for Mahoning Creek near Dayton, Oil Creek near Rouseville and West Branch Susquehanna River at Bower.

Monthly discharge of Red Bank Creek at Saint Charles, for the year ending Sept. 30, 1924.
(Drainage area 540 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	81	48	61.9	0.115	0.13
November	110	50	86.6	.160	.18
December	6,000	635	1,760	3.26	3.76
January	8,000	280	1,720	3.19	3.68
February	950	240	451	.835	.90
March	4,480	260	1,460	2.70	3.11
April	3,090	666	1,640	3.04	3.39
May	4,110	576	1,620	3.00	3.46
June	14,000	224	1,320	2.44	2.72
July	3,930	154	983	1.82	2.10
August	760	93	231	.428	.49
September	7,970	118	713	1.32	1.47
The Year	14,000	48	1,010	1.87	25.39

OHIO BASIN—STATION NO. 11

MAHONING CREEK NEAR DAYTON

Location.—At single-span steel highway bridge, known as Independence Bridge, about three miles northwest of Dayton, Armstrong County.

Drainage Area.—322 square miles.

Records Available.—August 12, 1916, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge. La Vern Mathews, observer.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of gravel and boulders. Control for low stages is at the first of a series of riffles about 50 feet downstream from the gage; practically permanent; for high stages a dam about one mile downstream.

Extremes of Discharge.—Maximum stage during the year, estimated from stations in adjacent drainage basins, 9.0 feet on June 29 (discharge, 8,420 second-feet); minimum, 1.52 feet from 8 a. m. October 19 to 4 p. m. October 22 (discharge, 20 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined between 40 and 1,500 second-feet. Gage supposed to have been read to hundredths twice daily. Daily mean gage heights were computed from a continuous daily hydrograph, using as many of the observer's gage heights as appeared authentic, in connection with graphs for Saint Charles, Hileman's Farm and Bower stations. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for extreme stages and estimated periods when they are fair.

Daily Mean Gage Height, in feet, of Mahoning Creek near Dayton, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.62	1.84	4.42	-------	3.11	2.78	4.90	2.80	-------	-------	-------	-------
2	1.62	1.81	-------	-------	3.05	2.75	4.50	2.95	-------	-------	-------	-------
3	1.60	1.79	-------	-------	2.95	2.79	3.80	3.10	-------	-------	-------	-------
4	1.60	1.79	-------	7.12	2.82	2.85	3.38	3.24	-------	-------	-------	-------
5	1.62	1.83	-------	6.95	-------	-------	3.25	3.25	-------	-------	-------	-------
6	1.64	1.89	-------	6.65	-------	-------	3.78	3.15	-------	-------	-------	-------
7	1.64	1.95	-------	6.42	-------	-------	4.22	3.01	2.48	-------	-------	-------
8	1.64	1.96	4.70	6.22	-------	-------	4.18	3.02	2.40	-------	-------	-------
9	1.62	1.93	-------	5.85	-------	-------	4.05	-------	2.35	-------	2.08	2.80
10	1.62	1.92	-------	5.95	2.79	-------	3.92	-------	2.30	-------	2.01	-------
11	1.60	1.90	4.62	6.15	2.77	3.26	3.75	-------	2.38	-------	1.95	-------
12	1.58	1.87	4.45	6.08	2.75	3.17	3.58	-------	2.38	-------	1.93	-------
13	1.58	1.86	4.18	5.75	2.79	3.07	3.45	-------	2.42	4.25	1.95	-------
14	1.58	1.85	3.85	5.30	2.77	2.97	3.32	-------	2.58	4.08	1.95	-------
15	1.56	1.89	-------	4.98	2.74	2.92	3.23	-------	2.45	3.65	1.94	-------
16	1.56	1.93	-------	4.98	2.69	2.87	3.16	-------	2.30	3.35	1.92	-------
17	1.55	1.93	-------	5.15	2.67	2.81	3.14	-------	2.15	3.08	1.89	-------
18	1.54	1.90	-------	5.10	2.66	2.76	3.28	-------	2.11	2.70	1.87	-------
19	1.52	1.88	-------	4.78	2.64	2.71	3.45	-------	2.08	2.38	2.00	-------
20	1.52	1.85	-------	4.58	2.62	2.69	3.68	-------	2.08	2.30	2.08	-------
21	1.52	1.81	-------	4.42	2.62	2.72	3.72	-------	1.98	2.22	1.99	-------
22	1.52	1.79	-------	4.28	2.60	2.88	3.58	-------	1.92	-------	2.15	2.60
23	1.54	1.90	-------	4.15	2.59	3.09	3.42	-------	-------	-------	3.29	2.49
24	1.84	1.98	-------	3.95	2.60	3.27	3.28	-------	-------	-------	3.90	2.42
25	1.84	1.97	-------	3.82	2.63	3.48	3.19	-------	-------	-------	4.10	2.36
26	1.86	1.94	-------	3.68	2.67	3.68	3.13	-------	-------	-------	4.12	2.29
27	1.86	2.01	-------	3.55	2.71	3.82	3.08	-------	-------	-------	3.78	2.28
28	1.86	1.99	5.48	3.42	2.73	3.92	2.97	-------	-------	-------	3.78	2.28
29	1.86	1.96	-------	3.28	2.76	4.05	2.86	-------	-------	-------	3.45	5.10
30	1.89	3.12	-------	3.18	-------	4.50	2.79	-------	-------	-------	-------	5.37
31	1.87	-------	-------	3.22	-------	5.00	-------	-------	-------	-------	-------	-------

Note.—Gage height unsatisfactory on days of no record. Stage-discharge relation Jan. 6-16, Jan. 19 to Feb. 4 and Feb. 11 to Mar. 3 affected by ice.

Daily discharge, in second-feet, of Mahoning Creek near Dayton, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	28	58	1,790	3,000	480	220	2,330	440	650	2,000	380	150
2	28	52	800	2,200	440	260	1,890	530	550	1,100	280	120
3	26	48	440	4,600	360	280	1,200	630	480	750	200	90
4	26	48	280	5,460	360	470	850	738	420	650	170	90
5	28	56	360	5,300	1,500	3,800	738	738	360	950	150	90
6	30	68	1,200	3,400	1,100	2,400	1,200	665	300	950	130	90
7	30	80	4,400	1,900	800	1,600	1,590	560	270	650	120	170
8	30	80	2,110	950	650	1,100	1,590	560	230	550	120	320
9	28	76	1,400	700	500	950	1,390	2,200	210	950	114	440
10	28	74	2,400	650	440	850	1,300	2,000	190	550	93	440
11	26	70	2,000	2,200	380	738	1,160	1,500	222	420	80	320
12	25	64	1,790	2,400	360	665	1,020	3,800	222	420	76	220
13	25	62	1,590	1,100	320	595	892	4,000	240	1,590	80	190
14	25	60	1,250	650	300	530	775	2,800	330	1,490	80	150
15	23	68	1,000	550	280	500	738	1,700	255	1,060	78	130
16	23	76	800	1,000	260	470	665	1,200	190	813	74	120
17	22	76	650	2,690	260	440	665	1,000	135	630	68	110
18	22	70	550	2,570	240	413	775	1,000	123	385	64	100
19	20	66	480	1,400	240	385	892	1,200	114	222	90	100
20	20	60	440	500	220	385	1,110	1,300	114	199	114	100
21	20	52	550	300	220	385	1,110	1,100	86	158	88	190
22	20	48	3,000	280	220	500	1,020	950	74	150	135	330
23	22	70	5,500	320	190	630	850	800	80	140	775	275
24	58	86	4,000	440	190	738	775	750	120	130	1,300	240
25	58	84	2,400	500	170	935	700	650	190	120	1,490	214
26	62	78	1,100	480	170	1,110	665	550	800	110	1,490	186
27	62	93	1,000	420	190	1,200	630	500	650	100	1,340	162
28	62	88	3,090	360	190	1,300	530	500	280	100	1,200	182
29	62	82	1,500	380	220	1,390	470	600	7,000	100	892	2,570
30	68	630	1,700	420	-------	1,890	440	800	6,000	100	650	2,950
31	64	-------	3,800	440	-------	2,450	-------	750	-------	380	220	-------

Note.—Discharge estimated Dec. 2-7, 9, 10, 15-27, Dec. 29 to Jan. 3, Feb. 5-9, Mar. 5-10, May 9 to June 6, June 23 to July 12, July 22 to Aug. 8, Aug. 30 to Sept. 8 and Sept. 10-21, because of unsatisfactory gage height record, and Jan. 6-16, Jan. 19 to Feb. 4 and Feb. 11 to Mar. 3, because of ice, from weather records, study of gage height graph and comparison with similar studies for Red Bank Creek at Saint Charles, Crooked Creek at Hileman's Farm and West Branch Susquehanna River at Bower.

Monthly discharge of Mahoning Creek near Dayton, for the year ending Sept. 30, 1924.

(Drainage area 322 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	68	20	34.5	0.107	0.12
November	630	48	87.4	.271	.30
December	5,500	280	1,720	5.34	6.16
January	5,460	280	1,530	4.75	5.48
February	1,500	170	388	1.20	1.29
March	3,800	220	954	2.96	3.41
April	2,330	440	999	3.10	3.46
May	4,000	440	1,180	3.66	4.22
June	7,000	74	696	2.16	2.41
July	2,000	100	578	1.80	2.08
August	1,490	64	392	1.22	1.41
September	2,950	90	361	1.12	1.25
The Year	7,000	20	748	2.32	31.59

OHIO BASIN—STATION NO. 12

ALLEGHENY RIVER AT KITTANNING

Location.—At five-span steel highway bridge, Market Street, Kittanning, Armstrong County.

Drainage Area.—9,010 square miles.

Records Available.—August 18, 1904, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by H. L. Sheakley and C. L. Ivory. Elevation of gage zero 764.45 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of gravel. Control is at a riffle about 500 feet downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, 17.65 feet observed at 7 a. m. January 12 (discharge, 103,000 second-feet); minimum, 1.23 feet from 5 p. m. October 21 to 7 a. m. October 23 (discharge, 722 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined between 800 and 250,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

Daily Mean Gage Height, in feet, of Allegheny River at Kittanning, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.55	1.60	6.02	11.21	6.55	4.40	12.54	6.20	5.93	9.45	3.40	2.08
2	1.48	1.59	6.45	12.17	6.40	4.33	10.76	7.15	5.65	8.15	2.93	2.08
3	1.44	1.57	6.55	13.16	6.23	4.37	9.43	7.30	5.45	6.63	2.45	2.27
4	1.46	1.61	5.75	14.67	6.10	4.57	8.47	7.90	5.25	5.75	2.20	2.53
5	1.42	1.70	5.44	12.92	6.23	6.98	7.75	8.75	5.13	5.83	2.12	2.81
6	1.31	1.75	6.71	10.49	7.93	9.74	8.27	8.40	4.97	5.73	2.23	2.86
7	1.27	1.83	12.37	8.35	9.46	9.63	10.87	7.57	4.87	6.23	2.42	2.75
8	1.34	1.89	12.67	7.40	8.54	8.95	12.11	7.37	4.75	5.37	2.53	3.35
9	1.30	2.00	11.33	7.10	7.65	7.85	11.91	11.83	4.67	5.30	2.75	3.77
10	1.29	2.20	10.67	6.83	6.75	6.85	10.72	13.72	4.60	5.53	2.84	4.53
11	1.29	2.29	9.66	10.15	6.07	6.57	9.85	12.75	4.20	5.57	2.68	4.27
12	1.29	2.21	8.60	17.23	5.83	6.37	8.80	11.75	3.93	5.43	2.48	4.93
13	1.29	2.13	7.77	14.68	5.50	5.97	7.90	12.23	3.77	5.43	2.38	4.95
14	1.29	2.04	7.60	12.55	5.30	5.80	7.33	11.88	3.80	5.87	2.30	4.90
15	1.29	1.92	7.87	10.35	4.95	5.63	6.95	11.54	3.85	5.60	2.15	4.97
16	1.29	1.82	7.20	9.95	4.47	5.35	6.80	10.75	4.00	5.17	2.01	4.75
17	1.28	1.78	6.63	14.49	4.17	5.10	6.45	10.07	4.27	4.80	1.95	4.57
18	1.27	1.76	6.10	14.07	3.97	5.00	6.35	9.70	3.73	4.33	2.00	3.97
19	1.25	1.75	5.70	12.30	4.17	4.90	-------	9.37	3.50	3.95	2.04	3.50
20	1.26	1.75	5.40	10.58	3.85	5.15	-------	9.47	3.32	3.70	2.28	3.43
21	1.24	1.75	5.43	8.67	3.41	5.35	9.75	8.93	3.28	3.35	2.28	3.22
22	1.23	1.75	6.05	6.70	3.41	5.65	9.23	8.15	3.37	3.33	2.40	3.47
23	1.24	1.80	7.40	5.45	3.41	6.10	9.98	7.47	3.43	3.44	3.60	3.93
24	1.32	1.89	8.77	5.20	3.57	8.08	10.42	6.77	3.60	3.34	3.51	4.15
25	1.41	2.00	8.67	5.67	3.95	9.07	9.47	6.47	3.83	3.23	3.71	3.55
26	1.49	2.26	8.47	5.70	4.15	9.60	8.50	6.50	5.27	3.19	4.10	3.57
27	1.49	2.69	7.83	4.43	4.13	9.80	7.55	6.35	6.33	2.97	3.75	3.57
28	1.50	3.10	8.25	4.20	4.27	10.25	6.83	6.25	6.46	2.66	3.12	3.73
29	1.56	3.57	9.03	4.23	4.60	11.25	6.40	6.25	10.81	2.36	2.61	6.31
30	1.58	4.51	8.23	5.05	-------	14.27	6.13	6.25	12.27	2.20	2.72	14.09
31	1.61	-------	9.83	6.37	-------	14.30	-------	6.23	-------	2.90	2.30	-------

Note.—Stage-discharge relation Jan. 25, 26, Feb. 19, 20 and Feb. 22 to Mar. 2 affected by ice. Gage heights Apr. 19 and 20 unsatisfactory.

Daily discharge, in second-feet, of Allegheny River at Kittanning, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1,040	1,100	13,800	47,100	16,800	6,000	56,800	14,800	13,300	34,400	4,390	1,760
2	990	1,100	15,800	54,500	15,800	6,500	44,300	20,200	11,900	26,400	3,270	1,760
3	935	1,040	16,800	62,400	14,800	6,960	34,400	20,800	11,000	16,800	2,350	2,000
4	935	1,100	12,800	75,300	14,200	7,630	28,400	24,500	10,100	12,800	1,920	2 440
5	880	1,220	11,000	60,000	14,800	19,000	23,900	30,400	9,640	12,800	1,760	3,060
6	775	1,280	17,300	42,200	24,500	36,500	27,100	27,800	9,200	12,400	2,000	3,270
7	722	1,400	56,100	27,800	35,100	35,800	45,000	22,600	8,780	14,800	2,260	3,060
8	827	1,460	58,400	21,400	28,400	31,700	53,800	21,400	8,380	11,000	2,440	4,390
9	775	1,600	47,900	19,600	22,600	23,900	47,100	51,500	7,980	10,500	3,060	5,340
10	775	1,920	43,600	17,800	17,800	17,800	43,600	66,500	7,600	11,400	3,060	7,260
11	775	2,080	36,500	40,000	14,300	16,800	37,200	59,200	6,380	11,900	2,850	6,660
12	775	1,920	29,000	98,600	12,800	15,800	30,400	51,500	5,580	11,000	2,440	8,780
13	775	1,840	23,900	75,300	11,400	13,800	24,500	54,500	5,340	11,000	2,260	9,200
14	775	1,680	22,600	57,600	10,500	12,800	20,800	52,300	5,340	13,300	2,080	8,780
15	775	1,460	24,500	41,400	9,200	11,900	19,000	49,300	5,340	11,900	1,840	9,200
16	775	1,340	20,200	38,600	7,260	11,600	17,800	44,300	5,840	10,100	1,600	8,380
17	775	1,340	16,800	73,500	6,380	9,610	15,800	39,300	6,660	8,380	1.530	7,600
18	722	1,280	14,300	70,000	5,840	9,200	15,800	36,500	5,080	6,660	1,600	5,840
19	722	1,280	12,400	55,300	5,600	9,200	30,000	34,400	4,620	5,840	1,680	4,620
20	722	1,280	11,000	42,900	4,600	10,100	42,000	35,100	4,160	5,080	2,080	4,390
21	722	1,280	11,000	29,700	4,390	11,000	37,200	31,000	4,160	4,390	2,080	3,940
22	722	1,280	13,800	17,300	4,400	11,900	33,000	26,400	4,390	4,160	2,260	4,620
23	722	1,340	21,400	11,000	4,400	14,300	38,600	22,000	4,390	4,390	4,850	5,580
24	775	1,460	30,400	10,100	4,400	25,800	41,400	17,800	4,850	4,160	4,620	6,380
25	880	1,600	29,700	9,000	4,600	32,400	35,100	16,200	5,340	3,940	5,080	4,850
26	990	2,000	28,400	8,000	4,800	35,800	28,400	16,200	10,500	3,940	6,100	4,850
27	990	2,850	23,900	6,960	4,800	37,200	22,600	15,800	15,300	3,490	5,340	4,850
28	990	3,720	26,400	6,380	5,500	40,000	17,800	14,800	16,200	2,850	3,720	5,080
29	1,040	4,850	31,700	6,380	6,000	47,100	15,800	14,800	44,300	2,160	2,640	15,300
30	1,100	7,260	33,000	9,200	-------	71,700	14,300	14,800	55,300	1,920	2,850	70,000
31	1,100	-------	37,200	15,800	-------	71,700	-------	14,800	-------	3,270	2,080	-------

Note.—Discharge estimated Jan. 25, 26, Feb. 19, 20 and Feb. 22 to Mar. 2 because of ice, from weather records, study of gage height graph and comparison with similar studies for Allegheny River at Franklin and Apr. 19 and 20, because of unsatisfactory gage height record, from discharge at same station.

Monthly discharge of Allegheny River at Kittanning, for the year ending Sept. 30, 1924.

(Drainage area 9,010 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	1,100	722	848	0.094	0.11
November	7,260	1,040	1,880	.209	.23
December	58,400	11,000	25,500	2.83	3.26
January	98,600	6,380	37,100	4.12	4.75
February	35,100	4,390	11,600	1.29	1.39
March	71,700	6,600	22,900	2.54	2.93
April	56,800	14,300	31,400	3.49	3.89
May	66,500	14,800	31,600	3.44	3.97
June	55,300	4,160	10,600	1.18	1.32
July	34,400	1,920	9,580	1.06	1.22
August	6,100	1,530	2,840	.315	.35
September	79,000	1,760	7,770	.862	.96
The Year	98,600	722	16,100	1.79	24.39

OHIO BASIN—STATION NO. 13

CROOKED CREEK AT HILEMAN'S FARM

Location.—At single-span steel highway bridge, about three and one-half miles south of Ford City, at Hileman's Farm, Armstrong County.

Drainage Area.—279 square miles.

Records Available.—October 16, 1909, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by D. S. Smeltzer and Ola M. Beck.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Left bank is high and not subject to overflow; right is low and becomes inundated at a stage of about 8 feet. Bed is composed of gravel and rock. Control is at a riffle about 300 feet downstream from the gage; practically permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 13.1 feet at 10 p. m. June 29 (discharge, about 16,500 second-feet); minimum, 0.96 foot from 7 a. m. October 13 to 6 p. m. October 14 (discharge, 9.5 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined below 500 second-feet and fairly well defined between 500 and 5,500 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

Daily Mean Gage Height, in feet, of Crooked Creek at Hileman's Farm, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.15	1.28	4.99	5.63	3.25	2.94	3.36	2.64	2.64	4.18	2.33	1.56
2	1.11	1.25	3.58	4.41	2.97	3.27	3.04	2.75	2.57	3.28	1.78	1.57
3	1.07	1.22	3.03	7.32	2.77	3.42	2.98	2.58	2.37	2.80	1.55	1.58
4	1.04	1.20	2.70	6.95	2.67	4.31	2.75	3.44	2.27	2.55	1.40	1.61
5	1.04	1.24	2.75	4.28	3.20	7.77	2.61	3.27	2.10	3.13	1.32	1.57
6	1.03	1.34	4.56	3.03	4.02	5.28	2.93	3.01	2.05	2.58	1.32	1.67
7	1.00	2.05	6.94	2.83	3.22	4.25	3.87	2.70	1.94	2.35	1.22	1.71
8	1.00	2.42	4.60	2.98	2.77	3.60	3.70	3.22	1.90	2.87	1.17	1.52
9	1.00	2.15	3.93	2.96	2.60	3.09	3.57	6.62	1.95	2.53	1.11	1.59
10	1.00	1.97	4.97	2.97	2.65	2.89	4.12	5.45	1.81	2.35	1.19	2.43
11	.98	1.83	4.25	4.35	2.60	2.94	3.68	4.08	1.68	2.15	1.13	2.29
12	.98	1.77	3.65	3.81	2.54	2.89	3.22	5.28	1.77	1.88	1.07	2.08
13	.96	1.73	3.30	3.10	2.47	2.73	2.92	5.90	1.76	2.60	1.19	1.98
14	.96	1.69	3.27	2.86	2.40	2.77	2.61	4.50	1.68	2.84	1.24	1.82
15	.98	1.58	2.95	2.62	2.33	2.68	2.43	3.80	1.67	2.35	1.19	1.68
16	.98	1.51	2.80	4.22	2.25	2.48	2.32	3.45	1.45	2.60	1.17	1.64
17	.98	1.47	2.72	6.18	2.94	2.41	2.12	3.18	1.45	1.85	1.33	1.46
18	1.00	1.43	2.59	4.14	2.92	2.43	2.36	3.17	1.39	1.80	1.86	1.45
19	1.00	1.40	2.49	3.40	2.90	2.48	3.18	3.45	1.60	1.43	1.78	1.46
20	1.00	1.35	2.40	3.06	2.93	2.62	2.97	3.05	1.54	1.59	1.82	1.45
21	.98	1.31	2.55	2.60	3.32	2.92	2.85	2.94	1.39	1.50	1.72	1.77
22	1.00	1.27	5.06	2.35	2.75	3.04	2.83	2.90	1.40	1.49	1.57	3.47
23	1.00	1.27	7.29	3.20	2.25	4.44	2.78	2.71	1.43	1.55	6.52	4.25
24	1.00	2.34	5.18	3.01	1.90	4.14	2.56	2.63	1.45	1.58	4.73	3.65
25	1.40	2.00	3.98	3.05	1.90	3.65	2.41	2.80	4.82	1.43	3.45	2.43
26	1.36	1.95	3.44	3.35	1.90	4.00	2.37	2.52	3.78	1.28	3.34	2.26
27	1.28	2.26	3.05	2.68	2.15	4.72	2.26	2.45	2.78	1.22	2.56	2.12
28	1.20	2.47	5.47	2.59	2.35	4.42	2.16	2.44	2.49	1.16	2.25	1.94
29	1.18	2.50	4.72	2.75	2.55	5.34	2.22	2.44	9.57	1.12	2.07	3.53
30	1.16	4.40	3.71	3.13	-------	5.47	2.13	3.00	8.17	1.32	1.97	6.78
31	1.30	-------	4.99	4.02	-------	4.02	-------	2.82	-------	2.50	1.72	-------

Stage-discharge relation Jan. 8, 9, Jan. 23 to Feb. 3, Feb. 10-23 and Feb. 27 to Mar. 6 affected by ice.

Daily discharge, in second-feet, of Crooked Creek at Hileman's Farm, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	18	26	2,510	3,190	280	180	970	480	480	1,700	292	51
2	16	24	1,170	1,890	320	240	745	540	420	930	91	55
3	14	21	745	5,560	400	420	710	450	314	570	52	56
4	13	20	510	5,100	480	1,300	540	1,050	260	420	35	61
5	13	23	540	1,790	850	2,200	450	890	185	815	29	55
6	12	30	2,090	745	1,520	2,200	675	710	168	450	29	70
7	11	168	4,950	605	850	1,700	1,430	510	132	302	21	77
8	11	342	2,090	550	540	1,170	1,250	850	120	605	18	49
9	11	205	1,430	550	450	780	1,170	4,510	135	420	16	58
10	11	141	2,510	675	400	640	1,610	2,950	98	302	20	348
11	10	102	1,700	1,890	320	675	1,250	1,610	72	205	16	270
12	10	89	1,170	1,340	280	640	850	2,840	89	115	14	178
13	9.5	81	930	780	240	540	640	3,560	87	450	20	144
14	9.5	73	890	605	220	540	450	1,990	72	605	23	100
15	10	56	675	450	220	510	348	1,340	70	302	20	72
16	10	47	570	1,700	200	378	286	1,050	40	150	18	65
17	10	43	510	3,950	180	336	193	850	40	108	29	42
18	11	38	450	1,610	170	348	308	815	34	95	110	40
19	11	35	384	1,010	150	378	850	1,050	59	38	91	42
20	11	31	330	745	150	450	675	745	51	58	100	40
21	10	28	330	745	140	640	605	675	34	46	79	89
22	11	25	2,620	302	140	745	605	640	35	45	55	1,050
23	11	25	5,560	280	130	1,890	570	510	38	52	4,370	1,700
24	11	297	2,730	240	120	1,610	420	480	40	56	2,190	745
25	35	150	1,520	240	120	1,170	336	570	2,290	38	1,050	348
26	32	135	1,050	220	120	1,520	314	390	1,340	26	970	255
27	26	255	745	220	130	2,190	255	360	570	21	420	193
28	20	372	3,070	220	140	1,890	209	354	384	18	250	132
29	19	390	2,190	220	150	2,840	235	354	9,500	16	174	1,090
30	18	1,890	1,250	240	-------	3,070	197	710	7,000	29	141	4,800
31	27	-------	2,510	280	-------	1,520	-------	570	-------	300	79	-------

Note.—Discharge Jan. 8, 9, Jan. 23 to Feb. 3, Feb. 10-23 and Feb. 27 to Mar. 6 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Kiskiminitas River at Avonmore and West Branch Susquehanna River at Bower.

Monthly discharge of Crooked Creek at Hileman's Farm, for the year ending Sept. 30, 1924.

(Drainage area 279 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	35	9.5	14.6	0.052	0.06
November	1,890	20	172	.616	.69
December	5,560	330	1,610	5.77	6.65
January	5,560	220	1,210	4.34	5.00
February	1,520	120	324	1.16	1.25
March	3,070	180	1,120	4.02	4.64
April	1,610	193	638	2.29	2.56
May	4,510	354	1,110	3.98	4.59
June	9,500	34	805	2.88	3.21
July	1,700	16	302	1.08	1.24
August	4,370	14	349	1.25	1.44
September	4,890	40	409	1.47	1.64
The Year	9,500	9.5	676	2.42	32.97

OHIO BASIN—STATION NO. 14

STONY CREEK AT JOHNSTOWN

Location.—At single-span steel highway bridge, Poplar Street, Johnstown, Cambria County, about one and one-half miles above the confluence of Stony Creek and the Little Conemaugh River.

Drainage Area.—468 square miles.

Records Available.—July 2, 1913, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by Edmund F. Miller. Elevation of gage zero 1,154.0 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Banks are high and not subject to overflow. Control for low water is at a riffle, where the bed is composed of gravel and small boulders, about 100 feet downstream from the gage; practically permanent. Control for high stages is at a riffle, where the bed is composed of gravel and large boulders, about 1,300 feet downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 16.9 feet at 8 p. m. March 29 (discharge, about 23,000 second-feet); minimum, 1.00 foot at 5 p. m. October 21 (discharge, 42 second-feet).

Ice.—Stage-discharge relation usually affected by ice for short periods.

Diversions.—A dam one mile upstream from the mouth of Quemahoning Creek creates a reservoir having a capacity of 1,740,000,000 cubic feet, from which water is carried through a conduit to the Cambria Plant of the Bethlehem Steel Company at Johnstown, and returned to the stream below the gaging station.

Accuracy.—Stage-discharge relation probably permanent except when affected by ice. Rating curve fairly well defined below 1,000 second-feet and well defined from 1,000 to 8,000 second-feet. Gage read to hundredths twice daily. Daily discharges ascertained by applying daily mean gage height to rating table. Results fair.

Cooperation.—A record of the quantity of water diverted from the Quemahoning Reservoir is furnished by the Bethlehem Steel Company, Johnstown.

Daily Mean Gage Height, in feet, of Stony Creek at Johnstown, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.05	1.33	5.26	6.11	2.51	2.13	6.32	4.47	2.67	3.76	1.97	1.15
2	1.07	1.35	3.55	4.85	2.60	2.08	5.11	3.86	2.62	2.94	1.59	-------
3	1.06	1.08	3.07	8.07	2.80	2.22	4.84	3.64	2.68	2.72	1.46	-------
4	1.06	1.07	2.83	7.64	2.75	2.38	5.01	3.80	2.55	2.72	1.39	-------
5	1.11	1.50	4.20	5.36	3.36	3.96	5.10	3.53	2.51	2.88	1.39	1.42
6	1.13	1.89	4.48	4.23	3.74	4.30	6.93	3.05	2.67	2.86	1.63	1.67
7	1.04	2.15	3.84	4.17	3.53	-------	7.02	2.83	2.73	3.68	1.46	1.50
8	1.01	2.44	3.40	4.31	2.56	-------	5.87	4.89	2.40	3.24	1.39	1.41
9	1.03	1.95	3.57	4.73	2.63	-------	5.23	10.32	2.94	3.26	1.35	1.47
10	1.06	1.79	4.29	3.71	2.50	-------	5.12	7.46	2.79	3.85	1.29	1.56
11	1.19	1.70	4.87	4.63	2.48	-------	5.21	6.46	2.63	2.60	1.29	1.68
12	1.13	1.65	4.46	5.88	2.41	-------	4.51	12.62	2.61	2.37	1.95	1.52
13	1.09	1.60	3.83	4.71	2.25	-------	4.17	8.94	2.98	4.38	2.33	1.42
14	1.08	1.59	3.66	3.67	2.19	-------	3.58	6.95	3.08	4.42	1.81	1.40
15	1.15	1.55	3.38	3.39	2.13	-------	3.37	6.00	2.62	3.28	1.44	1.33
16	1.17	1.64	2.87	3.98	1.98	-------	3.01	4.93	2.40	2.82	1.35	1.28
17	1.09	1.72	2.78	5.56	1.99	2.28	2.81	4.14	2.23	2.70	1.38	1.20
18	1.05	1.74	2.83	4.45	2.16	-------	3.11	3.99	2.15	2.64	1.42	1.18
19	1.03	1.59	2.66	3.97	2.24	-------	3.21	4.61	2.32	2.74	1.34	1.28
20	1.01	1.48	2.48	3.80	2.14	-------	3.00	4.00	2.19	2.56	1.82	1.36
21	1.01	1.45	2.43	3.01	2.10	-------	2.91	4.07	2.05	1.99	1.47	1.50
22	1.03	1.39	4.29	2.76	2.04	-------	2.89	3.95	1.98	1.99	1.41	1.82
23	1.02	1.70	6.43	2.90	2.02	-------	2.85	3.49	2.02	2.04	1.54	1.87
24	1.15	2.78	5.27	2.67	2.56	-------	2.79	3.35	2.18	1.84	1.75	1.71
25	1.32	2.56	4.53	2.62	2.63	-------	2.67	3.07	1.99	1.78	1.76	1.59
26	1.30	2.28	3.91	3.29	2.64	-------	2.44	2.90	1.84	1.67	2.21	1.46
27	1.18	2.14	3.64	2.29	2.62	4.49	2.34	2.51	1.84	1.70	1.65	1.42
28	1.08	2.12	6.98	2.24	2.24	6.01	2.33	2.76	2.10	1.58	1.47	1.42
29	1.10	2.05	5.84	2.31	2.10	13.49	2.69	3.07	7.25	1.53	1.37	2.60
30	1.23	5.13	4.74	2.42	-------	12.32	3.19	3.36	5.65	1.47	1.31	5.37
31	1.37	-------	6.43	2.67	-------	8.39	-------	2.86	-------	1.58	1.17	-------

Note.—Stage-discharge relation Jan. 7-9, 23, 26, 31, Feb. 3, 9 and Feb. 18 to Mar. 1 affected by ice. Gage height Mar. 7-16, 18-26 unsatisfactory and Sept. 2-4 not observed.

Daily discharge, in second-feet, of Stony Creek at Johnstown, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	52	126	2,760	3,600	595	380	3,830	2,010	695	1,440	350	74
2	56	132	1,280	2,280	645	415	2,560	1,520	645	810	217	117
3	54	58	935	6,220	600	460	2,280	1,280	695	695	168	182
4	54	56	750	5,510	750	550	2,460	1,440	645	695	144	217
5	64	182	1,760	2,860	1,140	1,600	2,560	1,210	595	810	144	154
6	70	330	2,010	1,760	1,360	1,840	4,590	870	695	810	234	234
7	50	438	1,440	1,400	1,210	1,800	4,720	750	695	1,360	168	182
8	44	572	1,140	950	645	1,500	3,380	2,370	550	1,000	144	150
9	48	350	1,280	800	600	1,100	2,660	9,990	810	1,070	132	172
10	54	290	1,840	1,360	595	1,000	2,560	5,370	750	1,440	114	200
11	84	252	2,370	2,100	595	950	2,660	4,070	645	645	114	252
12	70	234	2,010	3,380	550	850	2,010	14,300	645	528	350	182
13	60	217	1,440	2,190	482	750	1,760	7,500	870	1,920	528	154
14	58	217	1,360	1,360	460	650	1,280	4,720	935	1,920	290	147
15	74	200	1,140	1,140	438	600	1,140	3,490	645	1,070	161	126
16	80	234	810	1,600	370	550	870	2,370	550	750	132	111
17	60	252	750	3,060	360	505	750	1,680	482	695	141	87
18	52	271	750	1,920	340	550	935	1,600	438	645	154	82
19	48	217	695	1,600	320	600	1,000	2,100	505	695	129	111
20	44	175	595	1,440	320	650	870	1,600	460	645	290	135
21	44	164	572	870	320	800	810	1,680	392	370	172	182
22	48	144	1,840	750	320	850	810	1,600	370	370	150	290
23	46	252	3,950	700	320	1,000	750	1,210	370	392	200	310
24	74	750	2,760	695	320	1,100	750	1,140	460	310	271	252
25	123	645	2,010	645	340	1,160	695	935	370	290	271	217
26	117	505	1,520	600	360	1,300	572	810	310	234	460	168
27	82	438	1,280	505	360	2,010	528	595	310	252	234	154
28	58	415	4,720	482	360	3,490	528	750	415	217	172	154
29	62	392	3,270	505	380	16,000	695	935	4,980	200	138	645
30	96	2,560	2,190	550	-------	13,700	1,000	1,140	3,060	172	120	2,860
31	138	-------	3,950	550	-------	6,700	-------	810	-------	217	80	-------

Note.—Discharge does not include the water diverted from the Quemahoning Reservoir. Discharge estimated Jan. 7-9, 23, 26, 31, Feb. 3, 9 and Feb. 17 to Mar. 1, because of ice; Mar. 7-16, 18-26, because of unsatisfactory gage height record, and Sept. 2-4, because of no gage height record, from weather records, study of gage height graph and comparison with similar studies for United States Weather Bureau station at Franklin Street, Johnstown, Kiskiminitas River at Avonmore and Laurel Hill Creek at Ursina.

Monthly discharge of Stony Creek at Johnstown, for the year ending Sept. 30, 1924.

(Drainage area 468 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	138	44	66.6	0.385	0.44
November	2,560	56	369	.976	1.09
December	4,720	572	1,780	4.04	4.66
January	6,220	482	1,720	3.93	4.53
February	1,360	320	533	1.43	1.54
March	16,000	380	2,110	4.79	5.52
April	4,720	528	1,730	3.97	4.43
May	14,300	595	2,640	5.90	6.80
June	4,980	310	800	1.91	2.13
July	1,920	172	731	1.73	1.99
August	528	80	206	.660	.76
September	2,860	74	277	.835	.93
The Year	16,000	44	1,090	2.56	34.82

Note.—Discharge does not include the water diverted from the Quemahoning Reservoir. Run-off includes the quantity of water diverted.

OHIO BASIN—STATION NO. 15

BLACKLICK CREEK AT BLACKLICK

Location.—At three-span steel highway bridge on road to Gratton, about one-quarter of a mile north of the Pennsylvania Railroad Station, Blacklick, Indiana County.

Drainage Area.—386 square miles.

Records Available.—August 16, 1904, to December 31, 1905, and January 8, 1907, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge. Miss Carrie Kelly, observer.

Discharge Measurements.—Made from upstream side of bridge or by wading.

Channel and Control.—Right bank is high and not subject to inundation; left begins to overflow at a stage of about 12.0 feet. Bed is composed of sand, gravel and boulders. Control is at a riffle about 200 feet downstream from the gage; may shift occasionally.

Extremes of Discharge.—Maximum stage during the year, 11.0 feet at noon June 29 (discharge, about 15,000 second-feet); minimum, 2.06 feet at 7 a. m. October 8 (discharge, 23 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve fairly well defined below 10,000 second-feet. Gage supposed to have been read to hundredths twice daily. Daily mean gage heights were computed from a continuous daily hydrograph, using as many of the observer's gage heights as appeared authentic, in connection with graphs for Johnstown, Avonmore, Hileman's Farm and Bower stations. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for estimated periods when they are fair.

Daily Mean Gage Height, in feet, of Blacklick Creek at Blacklick, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.18	2.41	-------	5.65	3.45	3.25	-------	-------	-------	4.82	2.85	2.50
2	2.22	2.30	-------	-------	3.15	3.45	-------	-------	-------	4.10	2.64	2.61
3	2.17	2.27	-------	-------	3.35	3.75	-------	3.25	-------	3.65	2.33	2.78
4	2.14	2.32	-------	5.60	-------	5.70	-------	-------	-------	3.35	2.30	2.65
5	2.13	-------	-------	4.65	-------	-------	3.92	-------	-------	4.30	2.60	2.77
6	2.11	-------	-------	4.15	3.45	-------	4.90	3.55	-------	3.65	2.45	2.73
7	2.08	-------	-------	4.05	3.25	-------	4.75	-------	-------	3.98	2.39	2.55
8	2.07	-------	-------	3.85	3.35	-------	4.65	-------	2.95	4.15	2.36	2.49
9	2.23	-------	-------	3.55	3.25	3.95	-------	-------	2.90	3.70	2.29	2.50
10	2.19	-------	-------	3.70	3.25	3.75	-------	-------	2.94	3.40	2.24	3.36
11	2.17	-------	-------	-------	3.19	3.60	-------	6.10	2.97	3.31	2.21	-------
12	2.14	2.55	4.75	-------	3.13	3.45	-------	7.44	2.89	3.12	2.31	3.03
13	2.12	2.53	4.30	-------	3.11	3.25	-------	6.35	2.94	5.04	2.43	2.95
14	2.14	2.51	4.05	-------	3.08	3.18	3.70	5.50	2.96	4.35	2.34	2.90
15	2.19	2.48	3.85	3.55	2.95	3.15	3.60	5.15	2.69	3.70	2.31	2.73
16	2.21	2.52	3.75	-------	2.93	3.15	3.29	5.00	2.64	3.35	2.35	2.70
17	2.33	2.51	-------	-------	2.97	3.11	3.25	4.50	2.48	3.15	-------	2.64
18	2.29	2.47	-------	4.55	3.05	-------	-------	4.35	2.45	3.04	-------	2.52
19	2.25	2.43	-------	3.70	3.30	-------	-------	-------	2.40	2.90	2.74	2.50
20	2.19	2.41	-------	3.65	3.25	-------	-------	-------	2.51	2.75	2.98	2.47
21	2.29	2.40	-------	3.80	3.17	3.70	-------	-------	2.50	2.77	2.94	-------
22	2.27	2.35	-------	3.55	3.24	-------	-------	-------	2.55	2.64	2.69	-------
23	2.23	2.39	-------	3.25	3.16	-------	3.35	-------	-------	2.67	5.35	-------
24	2.29	-------	6.45	3.10	3.35	-------	-------	-------	-------	2.69	4.25	-------
25	2.29	-------	6.05	3.25	3.60	-------	3.29	-------	-------	2.60	3.50	-------
26	2.26	-------	-------	2.99	3.59	-------	3.28	-------	-------	2.45	3.41	2.99
27	2.23	-------	-------	3.15	3.25	-------	-------	-------	-------	2.39	3.04	2.75
28	2.18	-------	5.60	3.55	3.15	-------	-------	-------	-------	2.38	2.83	2.65
29	2.18	-------	-------	3.85	3.09	8.50	-------	-------	8.54	2.32	2.65	4.17
30	2.32	-------	-------	4.15	-------	-------	-------	-------	6.22	2.40	2.60	5.58
31	2.47	-------	-------	3.85	-------	-------	-------	-------	-------	-------	2.57	-------

Note.—Gage height unsatisfactory on days of no record. Stage-discharge relation Jan. 20-23, 25, Jan. 27 to Feb. 1, Feb. 8-14 and Feb. 17 to Mar. 4 affected by ice.

Daily discharge, in second-feet, of Blacklick Creek at Blacklick, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	39	94	2,000	2,840	400	320	1,500	850	550	1,730	268	125
2	46	63	1,000	2,600	418	360	1,200	600	420	1,070	139	164
3	38	57	850	7,000	530	480	1,200	472	380	725	71	236
4	33	68	700	2,840	1,000	900	1,000	1,000	340	530	63	180
5	32	75	1,400	1,520	1,700	2,800	910	850	340	1,240	160	232
6	28	150	1,700	1,160	592	2,000	1,840	658	340	725	108	214
7	25	320	3,600	1,030	472	1,400	1,730	550	340	990	87	142
8	24	220	1,800	827	440	1,200	1,520	850	315	1,160	79	122
9	48	220	1,500	658	420	950	1,600	5,500	335	760	61	125
10	40	150	2,200	760	400	798	2,200	3,600	310	560	50	530
11	38	120	2,000	1,400	360	690	1,700	3,600	325	500	44	420
12	33	142	1,730	2,600	340	592	1,400	6,320	286	390	66	365
13	30	136	1,240	1,500	340	472	1,600	4,260	310	1,960	100	315
14	33	128	1,030	750	320	445	760	2,680	335	1,330	74	290
15	40	118	872	658	315	418	690	2,230	196	760	66	214
16	44	132	798	1,700	305	418	500	1,960	176	530	77	200
17	71	128	700	4,000	260	390	472	1,420	118	418	110	176
18	61	114	600	1,520	240	420	650	1,330	108	365	700	132
19	52	100	560	760	240	480	900	1,300	90	290	218	125
20	40	94	489	650	240	550	700	1,100	128	222	330	114
21	61	90	600	550	240	760	650	800	125	232	310	90
22	57	77	2,600	480	240	900	550	700	142	176	196	480
23	48	87	6,500	420	240	1,200	530	600	180	188	2,520	900
24	61	600	4,260	380	240	1,400	500	550	140	196	1,240	440
25	61	480	3,510	360	240	1,600	500	500	90	160	625	340
26	55	400	1,400	335	240	1,500	500	500	90	108	560	335
27	48	380	1,200	340	240	1,700	440	550	90	87	365	222
28	39	420	2,840	340	260	2,800	400	550	280	85	258	180
29	39	700	4,000	340	360	8,660	340	700	8,660	68	180	1,160
30	68	4,000	1,700	340	-------	4,200	600	950	3,880	90	160	2,840
31	114	-------	4,600	360	-------	2,200	-------	600	-------	90	150	-------

Note.—Discharge estimated Nov. 5-11, Nov. 24 to Dec. 11, Dec. 17-23, 26, 27, 29-31, Jan. 2, 3, 11-14, 16, 17, Feb. 4, 5, Mar. 5-8, 18-20, 22-28, Mar. 30 to Apr. 4, Apr. 9-13, 18-22, 24, Apr. 27 to May 2, May 4, 5, 7-10, May 19 to June 7, June 23-28, July 31, Aug. 17, 18, Sept. 11 and 21-25, because of unsatisfactory gage height record, and Jan. 20-23, 25, Jan. 27 to Feb. 1, Feb. 8-14 and Feb. 17 to Mar. 4, because of ice, from weather records, study of gage height graph and comparison with similar studies for Stony Creek at Johnstown, Kiskiminitas River at Avonmore, Crooked Creek at Hileman's Farm and West Branch Susquehanna River at Bower.

Monthly discharge of Blacklick Creek at Blacklick, for the year ending Sept. 30, 1924.

(Drainage area 386 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	114	24	46.6	0.121	0.14
November	4,000	57	332	.860	.96
December	4,600	480	1,930	5.00	5.76
January	7,000	335	1,320	3.42	3.94
February	1,700	240	399	1.03	1.11
Mareh	8,660	320	1,390	3.60	4.15
April	2,200	340	949	2.46	2.74
May	5,500	472	1,560	4.04	4.66
June	8,660	90	647	1.68	1.87
July	1,960	68	572	1.48	1.71
August	2,520	44	304	.788	.91
September	2,840	90	380	.984	1.10
The Year	8,660	24	824	2.14	29.05

OHIO BASIN—STATION NO. 16

KISKIMINITAS RIVER AT AVONMORE

Location.—At four-span steel highway bridge, Avonmore, Westmoreland County.

Drainage Area.—1,720 square miles.

Records Available.—May 29, 1907, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by J. H. Shupe. Elevation of gage zero 805.64 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge.

Channel and Control.—Right bank is high and not subject to overflow; left is low and overflows at high stages. Bed is composed of gravel. Control is at the first of a series of riffles about 500 feet downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 24.0 feet at 6 a. m. March 30 (discharge, 51,800 second-feet); minimum, 2.70 feet at 4.45 p. m. October 22 (discharge, 425 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve fairly well defined below 30,000 second-feet. Gage read to hundredths twice daily; during high stages more frequently. Daily discharge ascertained by applying daily mean gage height to rating table. Results fair.

Daily Mean Gage Height, in feet, of Kiskiminitas River at Avonmore, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.92	3.27	10.62	12.83	10.80	5.54	10.83	7.55	6.34	9.11	4.08	3.13
2	2.90	3.09	8.12	10.09	10.15	5.49	9.03	8.41	5.90	7.03	3.68	3.13
3	2.88	2.97	6.82	15.22	10.03	5.74	8.11	7.17	5.64	6.03	3.28	3.31
4	2.90	2.92	6.10	16.30	8.07	6.56	8.08	7.34	5.40	5.66	3.12	3.41
5	2.87	3.13	7.04	11.31	6.70	10.42	7.91	6.87	5.10	6.39	3.15	3.29
6	2.84	4.05	9.22	8.75	9.23	10.72	9.03	6.20	5.02	5.78	3.32	3.29
7	2.82	5.22	11.75	12.61	8.42	9.90	12.63	5.77	5.76	5.47	3.30	3.44
8	2.81	5.69	9.37	14.80	5.90	8.64	10.85	6.61	5.13	7.90	3.19	3.21
9	2.80	5.07	9.22	15.24	5.45	7.49	9.78	15.95	5.21	6.51	3.22	3.66
10	2.81	4.42	11.42	14.88	5.25	7.22	9.85	14.00	5.46	5.69	3.04	5.47
11	2.83	4.02	11.49	11.84	5.15	7.12	8.81	11.20	4.93	5.36	2.91	4.77
12	2.82	3.85	9.48	9.74	5.10	6.79	7.88	16.30	4.59	4.79	3.01	4.24
13	2.83	3.65	8.26	8.11	4.87	6.36	7.23	17.00	4.72	6.20	3.44	3.84
14	2.83	3.52	8.06	6.91	4.65	6.19	6.73	12.55	6.02	8.08	3.62	3.94
15	2.85	3.42	6.91	6.11	4.55	6.02	6.33	11.37	5.19	6.37	3.38	3.99
16	2.88	3.27	6.26	7.67	4.20	5.56	5.85	10.17	4.69	5.30	3.12	3.47
17	2.85	3.35	6.01	13.12	4.25	5.42	5.51	8.67	4.36	4.75	3.26	3.37
18	2.82	3.45	5.68	9.53	4.30	4.89	5.51	7.84	4.29	4.48	3.82	3.29
19	2.78	3.35	5.31	7.95	4.30	4.94	6.08	9.02	4.66	4.15	3.42	3.24
20	2.76	3.26	5.08	7.35	4.27	5.34	5.63	8.44	4.36	3.92	3.57	3.24
21	2.76	3.21	5.08	6.53	4.36	6.02	5.51	7.92	4.03	3.75	3.82	3.91
22	2.71	3.19	9.14	8.22	4.89	6.24	5.45	8.14	3.86	3.70	3.84	5.27
23	2.73	3.31	15.16	11.08	6.84	6.94	5.55	7.24	3.96	3.95	8.39	6.11
24	2.95	4.49	12.80	11.07	8.02	9.24	5.35	6.70	4.01	3.80	6.29	4.99
25	3.06	5.50	9.91	11.20	7.71	9.13	5.05	6.74	4.26	3.50	5.23	4.31
26	3.05	4.89	8.58	11.00	7.74	9.81	4.95	6.14	5.50	3.35	4.71	3.93
27	2.98	5.05	7.63	9.57	7.65	10.01	4.73	5.72	4.46	3.28	4.44	3.63
28	2.92	4.85	11.89	9.67	7.94	10.21	4.58	5.72	4.55	3.20	3.84	3.53
29	2.86	4.47	12.39	10.30	6.57	10.39	4.93	5.99	17.96	3.27	3.51	4.46
30	2.88	8.33	9.65	10.67	-------	21.41	5.58	7.85	14.38	3.25	3.29	10.29
31	3.12	-------	11.23	12.05	-------	15.25	-------	7.10	-------	3.20	3.24	-------

Note.—Stage-discharge relation Jan. 7-11, Jan. 22 to Feb. 5 and Feb. 17 to Mar. 2 affected by ice.

Daily discharge, in second-feet, of Kiskiminitas River at Avonmore, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	540	770	10,300	15,200	2,200	1,700	10,700	5,400	3,740	7,620	1,410	700
2	540	665	6,110	9,360	2,200	2,000	7,460	6,560	3,260	4,620	1,090	700
3	540	570	4,360	21,300	2,400	3,030	6,110	4,880	2,920	3,380	805	805
4	540	540	3,500	24,600	2,600	4,120	6,110	5,010	2,680	3,030	665	875
5	510	700	4,620	11,800	3,400	9,930	5,820	4,490	2,360	3,860	700	805
6	510	1,320	7,780	7,160	7,780	10,500	7,460	3,620	2,250	3,140	805	805
7	480	2,460	12,900	5,000	6,560	9,170	14,700	3,140	3,140	2,800	805	910
8	480	3,030	8,120	4,200	3,260	6,860	10,700	4,120	2,360	5,820	735	735
9	480	2,360	7,780	3,200	2,680	5,270	8,800	23,700	2,460	3,900	735	1,090
10	480	1,680	12,000	3,000	2,460	4,880	8,800	18,200	2,800	3,030	632	2,800
11	510	1,320	12,200	6,000	2,460	4,750	7,160	11,500	2,150	2,680	540	2,050
12	480	1,160	8,290	8,630	2,360	4,360	5,820	24,600	1,860	2,050	600	1,500
13	510	1,020	6,410	6,110	2,150	3,860	4,880	26,700	1,960	3,620	910	1,100
14	510	945	6,110	4,490	1,860	3,620	4,240	14,700	3,380	6,110	1,020	1,240
15	510	875	4,490	3,500	1,860	3,380	3,740	12,000	2,460	3,860	875	1,020
16	540	770	3,740	5,540	1,500	2,920	3,140	9,550	1,960	2,580	665	910
17	510	840	3,380	15,900	1,300	2,680	2,800	7,010	1,680	2,050	770	840
18	480	910	3,030	8,290	1,300	2,150	2,800	5,680	1,500	1,770	1,160	805
19	480	840	2,580	5,960	1,300	2,150	3,500	7,780	1,960	1,500	875	770
20	452	770	2,360	5,140	1,200	2,580	2,920	6,560	1,680	1,240	1,020	770
21	452	735	2,360	3,990	1,200	3,380	2,800	5,820	1,320	1,160	1,160	1,240
22	425	735	7,620	3,400	1,200	3,620	2,680	6,110	1,240	1,090	1,160	2,580
23	452	805	21,300	3,000	1,200	4,490	2,920	4,880	1,320	1,320	6,560	3,500
24	570	1,770	15,200	2,660	1,300	7,780	2,680	4,240	1,320	1,160	3,740	2,250
25	632	2,800	8,980	2,200	1,300	7,620	2,250	4,240	1,500	945	2,460	1,590
26	632	2,150	6,860	2,000	1,300	8,800	2,250	3,500	2,800	840	1,960	1,240
27	600	2,250	5,400	1,900	1,300	9,170	1,960	3,030	1,770	805	1,680	1,020
28	540	2,050	13,100	1,900	1,500	9,550	1,860	3,030	1,860	735	1,160	945
29	510	1,770	14,300	1,900	1,500	24,800	2,150	3,280	29,800	770	945	1,770
30	540	6,410	8,460	2,000	-------	41,700	2,920	5,680	19,200	770	805	9,740
31	665	-------	11,500	2,000	-------	21,300	-------	4,750	-------	735	770	-------

Note.—Discharge Jan. 7-11, Jan. 22 to Feb. 5 and Feb. 17 to Mar. 2 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Stony Creek at Johnstown and Crooked Creek at Hileman's Farm and gage height records of Kiskiminitas River at Saltsburg and Vandergrift.

Monthly discharge of Kiskiminitas River at Avonmore, for the year ending Sept. 30, 1924.

(Drainage area 1,720 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	665	425	519	0.302	0.35
November	6,410	540	1,560	.872	.97
December	21,300	2,360	7,910	4.60	5.30
January	24,000	1,900	6,490	3.77	4.35
February	7,780	1,200	2,230	1.30	1.40
March	41,700	1,700	7,490	4.35	5.02
April	14,700	1,860	5,070	2.95	3.29
May	26,700	3,630	8,190	4.76	5.49
June	29,800	1,240	3,700	2.15	2.40
July	7,620	735	2,550	1.48	1.71
August	6,560	540	1,270	.738	.85
September	9,740	700	1,570	.913	1.02
The Year	41,700	425	4,060	2.36	32.15

OHIO BASIN—STATION NO. 17

KISKIMINITAS RIVER AT VANDERGRIFT

Location.—At pumping station of the American Sheet and Tin Plate Company, about 300 feet downstream from the Pennsylvania Railroad Station, Vandergrift, Westmoreland County.

Drainage Area.—1,830 square miles.

Records Available.—November 1, 1915, to September 30, 1924.

Gage.—A float type gage is installed at the pumping station. The float operates in a 3 inch pipe inserted in the pump house well, which is fed by gravity from the river. Gage heights are indicated on a vertical staff inside the pumping station; read to feet and inches twice daily by pump house engineer; during high stages more frequently. Elevation of gage zero 767.14 feet, United States Geological Survey datum.

Channel and Control.—Banks are high and not subject to overflow. Bed is composed of gravel and rock.

Extremes of Stage.—Maximum gage height during the year 23.58 feet observed at 6 a. m. March 30; minimum, 2.75 feet at 6 a. m. October 23.

Ice.—Stage-discharge relation usually affected by ice.

Cooperation.—Record is furnished by the American Steel and Tin Plate Company, Vandergrift.

Daily Mean Gage Height, in feet, of Kiskiminitas River at Vandergrift, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	3.17	3.71	10.92	12.37	6.79	5.92	11.77	6.85	7.28	10.45	4.84	4.33
2	3.04	3.46	8.54	9.92	6.30	6.09	9.79	9.17	7.03	8.23	5.38	3.92
3	2.92	3.30	7.08	14.06	6.00	6.12	8.84	8.30	6.75	7.49	4.92	3.92
4	2.92	3.17	6.46	16.84	5.92	6.74	8.70	8.16	6.58	6.66	4.46	3.83
5	2.96	3.25	6.50	11.10	6.25	10.28	8.67	8.04	6.12	6.54	4.17	3.84
6	2.83	4.08	8.70	8.82	8.08	10.93	8.91	7.54	6.01	6.50	4.17	3.67
7	2.88	5.62	11.34	7.66	-------	10.15	12.59	6.96	6.54	6.38	4.17	3.88
8	2.92	6.07	9.66	6.97	6.50	9.16	11.62	7.58	6.46	8.32	4.17	3.88
9	3.00	5.34	9.50	6.22	6.50	8.30	10.28	14.33	6.08	7.45	4.17	3.86
10	2.96	4.92	10.71	5.82	6.21	7.67	10.22	14.96	6.25	6.88	4.17	6.04
11	2.92	4.67	10.43	7.97	5.79	7.46	9.53	11.27	6.25	6.50	4.00	5.66
12	2.92	4.33	9.46	9.87	5.50	7.46	8.92	15.08	5.92	6.17	3.67	5.17
13	2.88	4.12	8.46	7.84	5.42	7.38	8.42	17.00	5.58	6.11	3.75	5.02
14	2.83	3.75	8.08	7.04	5.16	7.17	8.00	13.27	6.12	8.01	4.79	5.00
15	2.83	3.58	7.29	6.83	4.92	7.13	7.71	12.21	6.46	7.08	4.42	4.67
16	2.75	3.62	6.58	7.27	4.84	6.62	7.33	10.62	5.96	6.62	4.46	4.62
17	3.00	3.50	6.20	11.74	4.71	6.50	6.96	9.83	5.71	6.16	4.33	4.58
18	2.92	3.67	6.04	9.74	4.84	6.21	6.50	9.00	5.46	5.92	4.75	4.42
19	2.92	3.67	5.71	8.16	5.00	6.17	7.04	9.70	5.30	5.58	4.66	4.29
20	2.83	3.50	5.46	7.50	4.66	6.30	6.92	9.62	5.42	5.42	4.46	4.25
21	2.83	3.50	5.42	-------	5.29	6.66	6.62	8.96	5.17	5.00	4.42	4.02
22	2.83	3.50	7.77	-------	5.00	6.83	6.50	8.92	5.17	4.96	4.87	6.18
23	2.79	3.50	14.39	-------	4.58	7.42	6.46	8.46	5.08	5.04	8.11	7.37
24	2.83	4.15	12.72	-------	4.54	9.32	6.54	7.75	5.00	5.04	7.82	6.21
25	3.00	5.45	9.91	-------	4.58	9.58	6.42	7.67	4.96	4.92	6.65	5.54
26	3.33	4.67	8.59	-------	4.46	9.99	6.17	7.29	6.32	4.88	5.80	5.25
27	3.33	4.17	7.51	-------	4.75	11.15	6.33	6.84	5.92	4.50	5.42	5.04
28	3.38	4.17	11.31	-------	5.92	10.54	5.71	6.54	5.48	4.50	5.12	4.79
29	3.17	4.12	12.48	5.50	6.04	14.68	5.58	6.70	15.23	4.42	4.54	5.15
30	3.00	7.01	9.63	5.75	-------	21.58	6.17	8.15	15.55	4.17	4.50	9.67
31	3.08	-------	10.63	6.63	-------	15.69	-------	7.77	-------	4.17	4.42	-------

Note.—Gage height Jan. 21-25 unsatisfactory and Jan. 26-28 and Feb. 7 not observed. Stage discharge relation Jan. 21 to Feb. 4 and Feb. 18 to Mar. 2 affected by ice.

OHIO BASIN—STATION NO. 18

ALLEGHENY RIVER AT FREEPORT

Location.—At three-span steel highway bridge, Freeport, Armstrong County, about 500 feet upstream from mouth of Buffalo Creek.

Drainage Area.—11,400 square miles, including Buffalo Creek.

Records Available.—April 16, 1873, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read to tenths twice daily by Mrs. Anna R. Burtner; during high stages more frequently. Elevation of gage zero 734.98 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of sand and gravel. Control is at a riffle about two miles downstream from the gage.

Extremes of Stage.—Maximum gage height during the year, estimated from hydrograph, 22.0 feet at 6 p. m. June 29; minimum, 1.0 foot several days in October.

Ice.—Stage-discharge relation usually affected by ice.

Cooperation.—Station is maintained in cooperation with United States Engineer Office, Pittsburgh.

Daily Mean Gage Height, in feet, of Allegheny River at Freeport, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	1.1	8.5	14.1	7.9	8.4	14.6	6.5	6.2	12.1	2.05	2.1
2	1.4	1.15	7.65	14.4	6.85	8.15	12.6	7.9	6.0	8.85	2.0	1.9
3	1.3	1.45	7.35	16.4	6.4	7.4	10.65	7.85	5.4	7.95	1.8	1.7
4	1.3	1.3	6.35	19.3	6.1	7.45	9.1	7.75	5.1	7.05	1.7	2.15
5	1.3	1.3	6.15	15.4	6.3	10.0	7.95	8.85	5.1	6.3	1.7	2.4
6	1.3	1.5	8.25	12.2	9.35	11.55	9.05	8.35	4.85	5.8	1.7	2.7
7	1.3	2.0	14.6	9.75	10.75	11.1	12.4	7.7	4.6	5.8	1.75	2.3
8	1.2	3.5	14.25	8.2	9.75	10.1	13.7	7.8	4.6	5.65	1.9	2.1
9	1.2	3.25	12.3	8.2	8.65	9.35	12.75	14.4	4.4	5.4	1.85	2.25
10	1.2	2.6	12.7	8.2	7.45	8.6	12.15	16.95	4.35	5.3	1.7	3.3
11	1.1	2.4	12.15	11.05	6.65	8.0	11.3	15.1	4.05	5.1	1.6	3.35
12	1.1	2.3	11.3	17.9	6.2	7.1	10.15	14.25	3.9	5.0	1.6	4.1
13	1.1	2.3	10.45	16.5	5.7	6.35	9.25	16.7	3.6	5.2	1.6	4.2
14	1.1	2.2	9.25	13.9	5.5	6.05	7.95	15.1	3.6	6.45	1.5	3.5
15	1.1	2.2	8.6	11.45	5.5	5.55	6.85	13.05	3.55	5.75	1.5	3.1
16	1.0	2.2	8.15	10.95	5.5	5.4	6.4	11.6	3.4	5.3	1.5	2.9
17	1.05	2.0	7.3	16.8	5.45	5.2	6.05	10.8	3.4	4.9	1.5	2.9
18	1.2	2.0	6.35	16.35	6.65	4.9	5.7	9.9	3.3	4.35	2.0	2.8
19	1.2	2.0	5.45	14.1	8.5	4.9	7.35	8.7	3.3	4.1	1.65	2.6
20	1.2	2.0	4.95	12.25	9.1	4.8	11.15	8.95	3.2	3.9	1.75	2.3
21	1.2	1.9	5.1	10.45	9.1	4.9	10.95	8.4	3.2	3.9	2.05	2.7
22	1.2	1.9	6.95	8.55	9.1	6.1	8.95	7.8	3.2	3.7	2.2	3.65
23	1.1	2.0	11.75	7.25	9.1	6.8	9.75	7.1	3.2	3.55	5.3	4.65
24	1.1	2.1	11.8	6.1	9.1	8.95	10.4	6.55	3.1	3.15	5.0	3.6
25	1.0	3.25	10.5	6.2	9.0	10.15	9.55	6.1	3.15	3.0	4.45	2.7
26	1.0	3.75	9.6	5.7	8.65	11.6	8.45	6.4	4.7	2.9	4.0	2.25
27	1.0	4.0	8.85	-------	8.2	12.05	7.3	5.95	5.85	2.6	3.55	2.1
28	1.0	3.8	10.4	-------	8.1	10.9	6.45	6.0	5.25	2.4	3.3	1.9
29	1.0	3.85	11.95	-------	8.25	14.2	5.65	6.3	15.65	2.4	2.95	5.2
30	1.1	4.8	10.95	8.3	-------	19.75	5.35	7.1	18.05	2.4	2.65	14.1
31	1.1	-------	11.6	7.45	-------	17.1	-------	6.7	-------	2.3	2.4	-------

Note.—Stage-discharge relation Jan. 9, 10, Jan. 25 to Feb. 3 and Feb. 14 to Mar. 3 affected by ice. Gage height Jan. 27-29 not observed.

OHIO BASIN—STATION NO. 19

SOUTH FORK TEN MILE CREEK AT POLLOCK'S MILL

Location.—At single-span steel highway bridge, about two miles downstream from Jefferson, at Pollock's Mill, Greene County.

Drainage Area.—190 square miles.

Records Available.—June 22, 1915, to September 30, 1924.

Gage.—Staff attached to downstream corner of right abutment; read to tenths twice daily by James M. Pollock.

Discharge Measurements.—Made from upstream side of bridge or by wading.

Channel and Control.—Right bank is high and not subject to overflow; left begins to overflow at a stage of about 7 feet. Bed is a formation of rock shingle and gravel. Control is at a riffle about 200 feet downstream from the gage; may shift occasionally.

Extremes of Stage.—Maximum gage height during the year, estimated from hydrograph, 9.6 feet at 1 p. m. May 12; minimum, 1.2 feet on August 15 and 16 and from 6 p. m. September 1 to 6 p. m. September 5.

Ice.—Stage-discharge relation usually affected by ice.

Cooperation.—Station is maintained in cooperation with United States Engineer Office, Pittsburgh.

Daily Mean Gage Height, in feet, of South Fork Ten Mile Creek at Pollock's Mill, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.4	1.5	3.25	3.4	1.9	2.2	2.6	2.7	1.9	1.9	2.15	1.25
2	1.4	1.5	2.5	2.85	1.9	2.3	2.5	2.65	1.9	1.7	1.85	1.2
3	1.9	1.5	2.5	6.2	1.9	2.4	2.35	2.35	1.8	1.7	1.65	1.2
4	1.4	1.5	2.5	4.25	1.9	2.65	2.3	3.7	1.8	1.6	1.45	1.2
5	1.4	1.75	3.0	3.0	2.3	3.65	2.2	2.95	2.0	1.7	1.4	1.2
6	1.3	1.85	3.75	2.5	2.75	2.9	2.25	2.45	2.0	1.9	1.3	1.3
7	1.3	3.2	4.05	2.4	2.3	2.5	2.35	2.35	2.05	2.45	1.3	1.3
8	1.3	2.4	2.65	2.3	2.3	2.25	2.85	2.6	2.1	2.3	1.3	1.3
9	1.3	2.0	2.65	2.2	2.2	2.1	2.7	2.85	3.1	2.15	1.3	1.35
10	1.3	1.95	3.4	2.3	2.0	2.1	2.6	2.7	2.7	2.0	1.3	1.4
11	1.3	1.75	3.15	3.75	2.0	2.3	2.5	2.55	2.15	1.9	1.3	1.4
12	1.3	1.6	2.65	3.05	2.0	2.3	2.35	7.6	1.9	1.9	1.3	1.4
13	1.3	1.55	2.45	2.5	2.0	2.4	2.25	4.1	1.9	1.9	1.3	1.4
14	1.3	1.5	2.6	-------	2.0	2.5	2.05	3.9	1.9	1.8	1.3	1.4
15	1.35	1.5	2.45	2.0	2.0	2.4	2.0	3.85	1.9	1.8	1.2	1.4
16	1.4	1.5	2.2	6.15	2.0	2.1	2.0	3.25	1.9	1.65	1.2	1.4
17	1.4	1.5	2.15	3.9	2.0	2.2	1.9	3.2	1.9	1.5	1.4	1.35
18	1.4	1.5	2.1	3.05	1.9	2.2	2.6	2.9	1.95	1.5	1.3	1.3
19	1.4	1.5	2.0	2.75	1.9	2.2	3.55	2.5	1.95	1.5	1.3	1.3
20	1.4	1.5	1.9	2.65	4.45	2.2	2.5	2.4	1.6	1.5	1.3	1.3
21	1.4	1.5	1.9	2.6	4.0	2.8	2.15	2.3	1.6	1.4	1.3	1.3
22	1.4	1.5	3.1	2.3	3.85	2.9	2.1	2.2	1.6	1.3	1.3	2.5
23	1.4	1.55	6.65	2.0	2.55	3.2	2.05	2.2	1.8	1.4	1.4	2.4
24	1.6	2.35	3.5	2.0	2.0	2.0	1.9	2.15	2.1	1.5	1.4	2.0
25	1.6	2.4	2.55	2.2	2.0	2.7	1.9	2.25	1.9	1.5	1.45	1.7
26	1.6	2.35	2.5	2.1	2.0	4.1	1.8	2.15	1.6	1.3	1.8	1.6
27	1.6	2.5	2.6	2.1	2.0	3.85	1.7	2.05	1.6	1.3	1.7	1.6
28	1.5	2.5	3.3	2.1	2.0	3.7	2.15	2.0	1.6	1.3	1.5	1.65
29	1.5	2.65	2.8	-------	2.2	6.8	2.4	2.05	2.8	1.3	1.5	3.9
30	1.5	3.40	2.5	2.0	-------	3.9	2.35	2.35	2.15	1.3	1.5	4.75
31	1.5	-------	4.0	2.1	-------	2.8	-------	2.0	-------	1.4	1.4	-------

Note.—Gage height Jan. 14 and 29 unsatisfactory. Stage-discharge relation Feb. 8 and 9 affected by ice.

OHIO BASIN—STATION NO. 20

MONONGAHELA RIVER AT SOUTH BROWNSVILLE

Location.—At four-span steel highway bridge, known as Brownsville Bridge, South Brownsville, Fayette County, about one-quarter of a mile downstream from Lock No. 5.

Drainage Area.—5,130 square miles.

Records Available.—February 18, 1915, to September 30, 1924.

Gage.—Staff in two sections; lower is at Lock No. 5, attached to downstream side of middle wall, graduated from zero to 32.4 feet; upper is about 200 feet downstream from the lower lock gate, on railroad embankment, graduated from 31.0 feet to 45.5 feet. Gage read to tenths twice daily by Charles W. Keibler; during high stages more frequently. Elevation of gage zero 726.23 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge.

Channel and Control.—Right bank is high and not subject to overflow; left is overflowed during extremely high stages. Control is Lock and Dam No. 4. Flashboards are used on the dam during low water which affect the stage-discharge relation.

Extremes of Stage.—Maximum gage height during the year, 41.7 feet observed at 2 a. m. March 30; minimum, 9.9 feet from 8 a. m. October 29 to 8 p. m. October 30.

Ice.—Stage-discharge relation usually affected by ice.

Cooperation.—Station is maintained in cooperation with United States Engineer Office, Pittsburgh.

Daily Mean Gage Height, in feet, of Monongahela River at South Brownsville, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	11.8	10.5	16.85	29.7	13.2	13.35	18.45	17.7	15.7	12.45	11.9	12.05
2	11.75	10.85	15.45	23.55	12.95	13.15	15.9	20.35	14.0	12.15	14.35	11.9
3	11.7	11.25	14.6	27.1	12.80	13.55	14.8	17.3	13.4	11.7	13.75	12.0
4	11.55	11.45	13.8	33.8	12.90	13.9	14.4	16.7	12.95	11.35	12.95	12.35
5	11.45	11.7	13.95	24.2	12.85	15.0	14.4	15.95	12.7	11.2	12.5	12.75
6	11.35	12.05	15.8	17.75	14.7	16.45	14.5	14.8	12.7	11.6	12.3	12.55
7	11.2	13.5	17.6	14.5	15.3	16.45	16.8	14.0	12.55	12.3	12.15	12.35
8	11.2	16.5	16.6	13.7	14.25	15.55	19.45	13.5	12.15	13.05	12.05	12.15
9	11.1	15.25	16.1	13.45	13.35	14.25	18.2	15.8	12.75	13.8	12.0	12.3
10	11.0	13.8	17.1	13.2	12.95	13.5	17.0	21.6	16.15	14.0	12.0	12.4
11	10.8	13.0	18.2	14.7	12.5	13.4	16.0	18.05	17.65	13.0	12.0	12.7
12	10.85	12.8	18.25	19.55	12.4	13.25	14.85	27.75	15.05	12.45	12.25	13.05
13	10.95	12.6	16.85	18.2	12.4	12.95	13.9	40.1	13.55	12.5	12.35	12.95
14	10.8	12.5	16.6	15.7	12.2	13.3	13.35	30.85	12.9	14.6	12.25	12.7
15	10.7	12.4	17.4	14.1	12.0	13.8	13.0	23.0	13.25	15.15	12.1	12.5
16	10.8	12.4	16.05	15.4	11.75	13.35	12.65	19.55	12.7	13.55	12.0	12.4
17	10.8	12.4	15.05	24.05	11.6	13.05	12.35	17.05	12.05	12.5	12.0	12.3
18	10.7	12.25	14.95	20.2	11.75	13.2	12.35	15.35	11.6	11.9	11.85	12.05
19	10.6	12.35	14.0	16.95	14.7	14.05	12.8	14.95	11.45	11.5	11.75	12.0
20	10.6	12.4	13.75	15.2	25.35	14.5	13.35	14.2	11.05	11.25	11.6	11.9
21	10.5	12.4	13.55	14.05	30.35	15.50	13.3	13.9	11.0	10.95	11.6	11.95
22	10.4	12.4	14.45	12.8	21.9	16.35	13.35	15.15	10.85	10.8	12.9	13.0
23	10.3	12.3	20.45	12.4	16.55	15.8	13.3	15.3	10.65	11.9	14.05	14.15
24	10.25	12.85	26.75	12.45	14.35	15.35	13.05	14.0	10.55	12.15	13.65	14.1
25	10.2	14.5	23.1	12.85	13.5	14.65	12.65	13.4	10.6	11.9	13.35	13.4
26	10.1	14.8	18.3	14.25	13.2	15.05	12.3	12.95	10.6	11.4	14.15	12.9
27	10.1	14.25	15.8	14.6	13.2	17.8	12.05	12.65	10.4	11.0	14.65	12.5
28	10.0	14.0	18.3	13.95	13.3	19.8	11.85	12.35	10.75	10.75	13.5	12.35
29	9.9	13.6	26.55	12.95	13.35	27.75	12.65	12.5	13.5	10.5	12.85	12.9
30	9.9	14.2	21.05	12.7	-------	38.8	14.5	14.5	13.7	10.35	12.45	18.6
31	10.15	-------	19.55	13.1	-------	25.85	-------	18.25	-------	10.25	12.25	-------

OHIO BASIN—STATION NO. 21

YOUGHIOGHENY RIVER AT FRIENDSVILLE, MD.

Location.—At two-span steel highway bridge, Friendsville, Garrett County, about 6,000 feet upstream from the mouth of Bear Creek.

Drainage Area.—295 square miles.

Records Available.—August 17, 1898, to December 31, 1904, and September 1, 1922, to August 31, 1923, chain gage, and October 1, 1923, to September 30, 1924, staff gage.

Gages.—Standard chain attached to upstream side of bridge; elevation of gage zero 1,467.82 feet, United States Geological Survey datum. Staff gage attached to right side of pier near downstream end; read to half tenths twice daily by employees of Charles B. Hawley & Co., Inc. Elevation of gage zero 1,469.98 feet, United States Geological Survey datum.

Discharge Measurements.—Made from upstream side of bridge.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of gravel and rock. Low-water control is at a riffle, about 700 feet downstream from the gage, extending from the head of an island to the right and left banks, where the bed is composed of gravel and rock; probably permanent.

Extremes of Stage.—Maximum gage height during the year, 11.00 feet observed at 5 p. m. March 29; minimum, 1.75 feet from 5 p. m. October 2 to 7 a. m. October 23.

Ice.—Stage-discharge relation usually affected by ice.

Cooperation.—Station is maintained in cooperation with Charles B. Hawley & Co., Inc., Washington, D. C.

Daily Mean Gage Height, in feet, of Youghiogheny River at Friendsville, Md., for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.80	1.90	3.80	5.45	3.18	2.50	5.15	4.40	3.85	-------	2.78	2.15
2	1.78	1.88	3.25	4.45	3.00	2.65	4.55	4.22	3.85	-------	2.70	2.15
3	1.75	1.80	2.95	6.88	3.00	2.90	4.15	3.90	3.60	-------	2.62	2.35
4	1.75	1.82	2.85	6.50	3.00	3.20	4.12	3.80	3.50	-------	2.52	2.42
5	1.75	1.95	3.40	4.80	3.12	4.20	4.15	3.75	3.50	-------	2.48	2.42
6	1.75	2.25	3.42	-------	3.58	4.85	4.70	3.55	3.50	-------	2.40	2.42
7	1.75	2.30	3.25	-------	3.18	4.65	5.80	3.35	3.45	-------	2.38	2.42
8	1.75	2.55	3.15	3.40	3.00	3.85	5.35	3.62	3.55	-------	2.35	2.40
9	1.75	2.38	3.75	3.10	3.00	3.50	4.85	5.15	4.30	3.90	2.32	2.35
10	1.75	2.28	4.38	3.00	2.90	3.45	4.60	4.95	4.12	3.55	2.32	2.48
11	1.75	2.20	4.20	3.92	2.90	3.20	4.30	4.82	3.85	3.20	2.32	2.58
12	1.75	2.20	3.75	4.00	2.85	3.05	4.00	7.25	3.65	3.08	2.38	2.42
13	1.75	2.18	3.50	3.45	2.80	3.00	3.75	7.48	3.35	4.18	2.42	2.42
14	1.75	2.05	3.42	3.10	2.80	3.00	3.55	5.75	3.25	4.28	2.42	2.40
15	1.75	2.00	3.25	2.85	2.80	3.00	3.35	4.95	3.10	3.85	2.35	2.32
16	1.75	2.00	3.05	3.20	2.80	2.90	3.25	4.45	3.05	3.45	2.32	2.32
17	1.75	2.08	3.00	3.88	2.80	2.95	3.20	4.15	2.85	3.25	2.32	2.32
18	1.75	2.12	2.85	3.45	2.90	3.00	3.15	4.00	2.85	3.00	2.32	2.28
19	1.75	2.12	2.70	3.25	3.00	3.05	3.30	3.90	2.85	2.98	2.32	2.32
20	1.75	2.05	2.60	3.05	3.00	3.50	3.40	3.65	2.75	2.85	2.32	2.35
21	1.75	2.00	2.75	-------	3.00	3.45	3.45	4.12	2.65	2.75	2.32	2.42
22	1.75	2.00	3.60	-------	-------	3.10	3.35	4.18	2.60	2.72	2.32	2.68
23	1.78	2.18	4.95	2.80	-------	3.10	3.45	3.95	2.55	3.28	2.55	2.82
24	1.88	2.90	4.80	2.75	-------	3.25	3.25	3.75	2.50	3.05	2.40	2.72
25	1.90	2.95	4.15	2.85	-------	3.35	3.10	3.65	2.50	2.85	2.38	2.48
26	1.90	2.70	3.75	3.00	-------	4.05	3.00	3.45	2.50	2.70	2.42	2.42
27	1.90	2.50	3.52	-------	-------	4.95	3.00	3.40	2.55	2.68	2.40	2.35
28	1.90	2.48	5.65	-------	-------	5.38	3.05	3.55	2.85	2.60	2.32	2.32
29	1.88	2.50	5.30	-------	-------	9.40	3.35	3.55	3.35	2.52	2.30	2.45
30	1.85	3.35	4.25	2.80	-------	9.50	3.40	4.05	3.10	2.52	2.25	3.45
31	1.90	-------	4.95	3.75	-------	6.65	-------	3.85	-------	2.52	2.18	-------

Note.—Stage-discharge relation Jan. 6, 7, 21-30 and Feb. 9-29 affected by ice. Gage heights Jan. 6, 7, 21, 22, 27-29, Feb. 22-29 and July 1-8 not observed.

OHIO BASIN—STATION NO. 22

CASSELMAN RIVER AT MARKLETON

Location.—At two-span steel highway bridge, Markleton, Somerset County.

Drainage Area.—365 square miles.

Records Available.—August 13, 1913, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by N. B. Sanner.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Both banks are high and not subject to overflow. Control is a 6 inch water main, backed with gravel and boulders, about 250 feet downstream from the gage, at the head of a series of riffles; probably permanent.

Extremes of Discharge.—Maximum stage during the year, 12.17 feet observed at 5 p. m. March 29 (discharge, about 21,400 second-feet); minimum, 1.82 feet at 5 p. m. October 14 (discharge, 32 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

Daily Mean Gage Height, in feet, of Casselman River at Markleton, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.88	2.16	4.32	5.09	3.57	2.89	5.37	4.50	3.42	4.46	2.57	2.17
2	1.85	2.10	3.65	4.40	3.57	2.99	4.72	4.09	3.78	3.98	2.44	2.28
3	1.87	2.03	3.38	6.72	3.52	3.01	4.47	3.83	3.59	3.94	2.36	2.48
4	1.86	2.02	3.23	6.15	3.53	3.32	4.82	4.13	3.48	3.65	2.34	2.35
5	1.86	2.43	4.35	4.82	3.95	4.79	4.91	3.77	3.39	4.26	2.32	2.32
6	1.84	2.72	4.40	3.95	4.47	5.80	6.73	3.57	3.59	3.76	2.28	2.56
7	1.84	3.02	3.88	3.77	3.61	4.82	6.28	3.45	3.61	4.54	2.26	2.37
8	1.84	3.04	4.00	3.71	3.37	4.12	5.32	4.46	3.47	4.46	2.27	2.27
9	1.84	2.75	4.55	3.61	3.23	3.82	5.05	6.68	5.16	4.06	2.24	2.30
10	1.84	2.59	5.02	3.51	3.22	4.03	4.99	5.51	4.39	3.71	2.30	2.34
11	1.85	2.46	4.80	5.25	3.07	3.63	4.69	5.02	3.97	3.56	2.21	2.38
12	1.87	2.43	4.26	4.59	3.14	3.49	4.37	7.94	3.85	3.39	3.82	2.32
13	1.86	2.43	3.95	4.07	3.01	3.43	4.17	6.76	3.99	6.03	3.00	2.26
14	1.83	2.35	3.85	3.69	2.95	3.24	4.01	5.63	3.79	5.46	2.61	2.20
15	1.88	2.31	3.47	3.29	2.88	3.19	3.95	5.35	3.52	4.28	2.43	2.18
16	1.92	2.28	3.39	4.30	2.85	3.09	3.72	4.78	3.37	3.87	2.32	2.13
17	1.94	2.33	3.34	5.45	2.82	3.03	3.61	4.49	3.21	3.64	2.36	2.10
18	1.87	2.32	3.20	4.39	2.97	3.28	3.73	4.39	3.09	3.44	2.38	2.11
19	1.89	2.28	3.08	3.88	3.09	3.75	3.79	4.30	3.31	3.24	2.31	2.10
20	1.90	2.20	3.08	3.84	2.91	3.81	3.58	3.99	3.01	3.08	2.24	2.14
21	1.90	2.21	3.11	2.74	2.95	3.81	3.52	4.25	2.88	2.98	2.22	2.38
22	1.86	2.23	3.95	3.21	2.92	3.57	3.49	4.31	2.85	2.92	2.22	2.59
23	1.88	2.33	5.68	3.61	3.00	3.59	3.49	3.99	2.77	3.10	3.13	2.59
24	2.20	3.04	5.29	3.43	2.93	4.29	3.30	3.83	2.88	2.86	3.06	2.44
25	2.40	3.07	4.47	3.33	2.90	4.29	3.21	3.78	3.51	2.74	2.76	2.28
26	2.27	2.78	4.12	3.34	2.87	4.50	3.13	3.65	3.04	2.66	3.05	2.21
27	2.16	2.70	3.90	3.05	2.89	4.83	3.03	3.52	3.47	2.60	2.63	-------
28	2.10	2.60	6.08	2.94	3.01	5.95	3.05	3.75	3.65	2.54	2.46	-------
29	2.04	2.62	5.22	2.95	2.94	10.47	3.59	3.59	7.43	2.47	2.33	-------
30	2.06	4.56	4.45	3.52	-------	9.17	3.46	3.84	5.64	2.48	2.25	-------
31	2.20	-------	5.19	3.87	-------	6.87	-------	3.55	-------	2.45	2.21	-------

Note.—Stage-discharge relation Jan. 6-10, 19, 20, Jan. 22 to Feb. 3, Feb. 10, 12-14, 18-26 and Mar. 10 and 11 affected by ice. Gage height Sept. 27-30 not observed account of repairs being made to bridge.

Daily discharge, in second-feet, of Casselman River at Markleton, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	38	80	1,460	2,440	260	312	2,880	1,690	616	1,690	187	82
2	35	68	814	1,570	320	361	1,920	1,240	946	1,140	149	107
3	37	57	616	5,200	460	366	1,690	994	771	1,090	128	160
4	36	55	514	4,200	731	546	2,050	1,240	691	814	122	125
5	36	146	1,570	2,050	1,090	2,050	2,180	901	616	1,460	117	117
6	34	239	1,570	950	1,690	3,570	5,200	731	771	901	107	184
7	34	366	1,040	750	771	2,050	4,500	654	771	1,690	102	130
8	34	394	1,140	700	581	1,240	2,720	1,690	654	1,690	105	105
9	34	251	1,800	650	514	946	2,310	5,200	2,580	1,240	98	112
10	34	193	2,310	650	460	850	2,310	3,040	1,570	856	112	122
11	35	155	2,050	2,580	394	750	1,920	2,310	1,090	731	90	133
12	37	146	1,460	1,800	360	691	1,570	7,900	994	616	946	117
13	36	146	1,090	1,240	340	654	1,350	5,450	1,140	3,990	366	102
14	33	125	994	856	320	514	1,140	3,200	946	3,040	200	88
15	38	115	654	546	307	481	1,090	2,880	691	1,460	146	84
16	42	107	616	1,460	294	421	856	2,050	581	994	117	74
17	45	120	581	2,880	280	394	771	1,690	481	814	128	68
18	37	117	481	1,570	280	546	901	1,570	421	654	135	70
19	39	107	421	700	280	901	946	1,460	546	514	115	68
20	40	88	421	360	280	946	771	1,140	366	421	98	76
21	40	90	421	247	280	946	691	1,350	307	356	93	133
22	36	95	1,090	240	280	731	691	1,460	294	326	93	193
23	38	120	3,380	200	280	771	691	1,140	259	421	451	193
24	88	394	2,720	180	280	1,460	546	994	307	298	394	149
25	138	394	1,690	170	280	1,460	481	946	691	247	255	107
26	105	263	1,240	170	280	1,690	451	814	394	217	394	90
27	80	231	1,040	156	312	2,050	394	691	654	196	206	80
28	68	196	4,100	170	366	3,990	394	901	814	178	155	70
29	58	203	2,580	180	336	15,000	771	771	6,700	158	120	240
30	62	1,800	1,570	200	-------	11,200	654	994	3,200	160	100	1,700
31	88	-------	2,580	240	-------	5,700	-------	731	-------	152	90	-------

Note.—Discharge estimated Jan. 6-10, 19, 20, Jan. 22 to Feb. 3, Feb. 10, 12-14, 18-26 and Mar. 10 and 11, because of ice, and Sept. 27-30, because of no gage height record, from weather records, study of gage height graph and comparison with similar studies for Laurel Hill Creek at Ursina, Stony Creek at Johnstown and Raystown Branch Juniata River at Saxton.

Monthly discharge of Casselman River at Markleton, for the year ending Sept. 30, 1924.

(Drainage area 365 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	138	33	49.5	0.136	0.16
November	1,800	55	229	.627	.70
December	4,100	421	1,420	3.89	4.48
January	5,200	150	1,140	3.12	3.60
February	1,600	260	438	1.20	1.29
March	15,600	312	2,050	5.62	6.48
April	5,200	394	1,490	4.08	4.55
May	7,900	654	1,870	5.12	5.90
June	6,700	259	1,030	2.82	3.15
July	3,990	152	920	2.52	2.90
August	946	90	191	.523	.60
September	1,700	68	169	.463	.52
The Year	15,000	33	921	2.52	34.33

OHIO BASIN—STATION NO. 23

LAUREL HILL CREEK AT URSINA

Location.—At two-span steel highway bridge, Ursina, Somerset County.

Drainage Area.—122 square miles.

Records Available.—August 12, 1913, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by Miss Lizzie R. Case.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of gravel and boulders. Control is at a riffle, where the bed is composed of gravel and boulders, a short distance downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, 9.30 feet observed at 10 a. m. March 29 (discharge, about 10,200 second-feet); minimum, 1.50 feet at 8 a. m. August 4 (discharge, 2.8 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined below 2,400 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

Daily Mean Gage Height, in feet, of Laurel Hill Creek at Ursina, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.78	1.96	3.81	4.15	2.88	5.66	3.76	3.98	2.71	2.83	1.94	1.85
2	1.78	1.88	3.24	3.50	2.87	5.76	3.17	3.30	2.39	2.42	1.85	1.98
3	1.80	1.95	2.86	5.85	2.60	5.84	3.04	2.90	2.39	2.36	1.70	1.88
4	1.85	1.86	2.70	4.83	2.43	5.72	3.13	3.38	2.41	2.33	1.62	1.94
5	1.76	2.08	3.42	3.63	2.71	5.10	3.28	3.27	2.34	2.57	1.92	1.97
6	1.76	1.91	3.36	3.04	3.27	3.44	3.92	2.76	2.41	2.40	1.85	1.99
7	1.80	2.78	3.10	2.82	3.01	3.35	3.43	2.69	2.36	2.66	1.89	1.87
8	1.86	2.83	3.10	2.82	2.56	3.14	3.72	3.34	2.37	2.80	1.86	1.87
9	1.75	2.80	3.74	2.62	2.51	2.69	3.64	4.96	3.35	2.32	1.85	1.97
10	1.83	2.48	4.06	2.52	2.41	2.74	3.68	3.81	2.90	2.26	1.96	2.03
11	1.83	2.28	4.10	3.53	2.44	2.76	3.55	3.83	2.82	2.27	1.94	2.54
12	1.79	2.26	3.72	2.88	2.34	2.72	3.16	5.54	2.74	2.32	2.26	2.26
13	1.78	2.16	3.18	2.38	2.35	2.58	2.89	4.86	2.90	3.75	2.14	2.06
14	1.75	2.19	2.92	2.32	2.38	2.42	2.75	3.90	2.56	3.02	1.92	2.04
15	1.79	2.17	2.75	2.55	2.36	2.46	2.69	3.48	2.31	2.39	1.88	2.18
16	1.80	2.15	2.68	2.76	2.17	2.35	2.54	3.22	2.30	2.40	1.77	2.10
17	1.80	2.13	2.59	3.11	2.84	2.41	2.47	2.94	2.32	2.30	1.86	2.11
18	1.74	2.19	2.50	2.75	2.60	2.49	2.56	2.58	2.21	2.27	1.84	1.97
19	1.79	2.14	2.45	2.76	2.29	2.49	2.42	3.40	2.35	2.21	1.66	1.96
20	1.83	2.16	2.39	2.70	4.11	2.77	2.36	3.14	2.29	2.16	1.73	1.97
21	1.85	2.14	2.75	2.44	6.48	2.88	2.19	2.82	2.66	2.00	2.02	2.01
22	1.80	2.17	2.69	2.47	6.52	2.74	2.30	2.84	2.68	2.14	1.91	2.22
23	1.84	2.26	4.43	2.50	6.42	2.57	2.35	2.67	2.02	2.35	2.32	2.25
24	1.96	2.74	3.86	2.46	5.48	2.68	2.34	2.68	2.40	2.02	2.27	2.10
25	1.90	2.84	3.28	2.66	5.74	2.98	2.27	2.84	1.92	2.00	2.15	2.07
26	1.86	2.64	2.92	2.51	5.55	3.22	2.24	2.66	1.99	2.08	2.54	1.97
27	1.88	2.54	2.99	2.74	5.57	3.42	2.22	2.89	2.05	2.01	1.92	1.95
28	1.88	2.49	4.76	2.50	5.85	4.15	2.36	2.44	2.47	1.82	1.86	1.89
29	1.88	2.58	3.92	2.44	5.76	7.93	2.53	2.49	5.18	1.96	1.87	2.27
30	1.90	4.28	3.73	2.46	-------	6.65	3.18	2.56	3.46	1.94	1.82	3.83
31	1.82	-------	4.24	2.58	-------	4.82	-------	2.42	-------	1.92	1.75	-------

Note.—Stage-discharge relation Jan. 8, 9, Jan. 19 to Feb. 3, Feb. 6, 7, 9-15, Feb. 17 to Mar. 5, Mar. 7, 8 and 10-13 affected by ice.

Daily discharge, in second-feet, of Laurel Hill Creek at Ursina, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	22	52	1,160	1,530	130	130	1,120	1,340	366	440	48	32
2	22	37	720	900	150	150	650	755	190	205	32	56
3	25	50	459	3,560	170	200	582	485	190	177	12	37
4	32	34	360	2,190	210	420	650	825	200	164	6.7	48
5	20	80	825	1,020	366	2,000	755	720	168	284	44	54
6	20	42	790	582	550	862	1,250	396	200	195	32	58
7	25	408	615	433	420	480	862	354	177	336	38	36
8	34	440	615	300	278	400	1,070	790	182	420	34	36
9	18	420	1,120	240	150	354	1,020	2,440	790	159	32	54
10	30	235	1,430	256	150	360	1,070	1,160	485	136	52	68
11	30	143	1,430	940	130	280	940	1,200	433	140	48	267
12	24	136	1,070	472	120	240	650	3,120	384	159	136	136
13	22	103	685	186	120	220	478	2,310	485	1,120	97	75
14	18	112	498	159	100	205	390	1,250	278	550	44	70
15	24	106	390	272	100	225	354	900	154	190	37	109
16	25	100	348	396	106	172	267	685	150	195	21	85
17	25	94	294	615	85	200	230	511	159	150	34	88
18	17	112	245	390	85	240	278	289	118	140	31	54
19	24	97	220	200	85	240	205	825	172	118	9.0	52
20	30	103	190	120	85	402	177	650	146	103	16	54
21	32	97	390	85	85	472	112	433	336	60	65	62
22	25	106	354	85	100	384	150	446	348	97	42	122
23	31	136	1,730	85	100	284	172	342	65	172	159	132
24	52	384	1,200	85	100	348	168	348	195	65	140	85
25	40	446	755	85	120	537	140	446	44	60	100	78
26	34	324	498	85	120	685	129	336	58	80	267	54
27	37	267	544	85	120	825	122	478	72	62	44	50
28	37	240	2,190	85	130	1,530	177	215	230	28	34	38
29	37	289	1,250	100	130	7,300	262	240	2,700	52	36	140
30	40	1,630	1,120	100	-------	4,800	685	278	862	48	28	1,200
31	28	-------	1,530	120	-------	2,190	-------	205	-------	44	18	-------

Note.—Discharge Jan. 8, 9, Jan. 19 to Feb. 3, Feb. 6, 7, 9-15, Feb. 17 to Mar. 5, Mar. 7, 8 and 10-13 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Casselman River at Markleton, Stony Creek at Johnstown and Raystown Branch Juniata River at Saxton.

Monthly discharge of Laurel Hill Creek at Ursina, for the year ending Sept. 30, 1924.

(Drainage area 122 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	52	17	28.4	0.233	0.27
November	1,630	34	227	1.86	2.08
December	2,190	190	807	6.61	7.62
January	3,560	85	508	4.16	4.80
February	550	85	158	1.30	1.40
March	4,800	130	873	7.16	8.26
April	1,250	112	504	4.13	4.61
May	3,120	205	799	6.55	7.55
June	2,700	44	345	2.83	3.16
July	1,120	28	198	1.62	1.87
August	267	6.7	56.0	.459	.53
September	1,200	32	114	.934	1.04
The Year	4,800	6.7	387	3.17	43.19

OHIO BASIN—STATION NO. 24

YOUGHIOGHENY RIVER AT CONNELLSVILLE

Location.—At two-span steel highway bridge between New Haven and Connellsville, Fayette County.

Drainage Area.—1,320 square miles.

Records Available.—July 22, 1908, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge. Peter M. Rulli, observer. Elevation of gage zero 860.13 feet, United States Geological Survey datum.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of gravel and rocks. Control is at a riffle about 500 feet downstream from the gage, where bed is rock formation; permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 20.5 feet at 11 p. m. March 29 (discharge, 65,900 second-feet); minimum, 0.27 foot on October 23, estimated from Sutersville record (discharge, 50 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined below 30,000 second-feet. Gage supposed to have been read to hundredths twice daily. Daily mean gage heights were computed from a continuous daily hydrograph, using as many of the observer's gage heights as appeared authentic, in connection with graphs for the Sutersville gaging station and the United States Weather Bureau gage height stations at Confluence and West Newton on the same stream. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for estimated periods when they are fair.

Daily Mean Gage Height, in feet, of Youghiogheny River at Connellsville, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-------	0.88	5.12	6.88	3.52	2.32	6.70	5.50	-------	3.97	-------	0.52
2	.51	-------	4.20	5.73	3.12	-------	5.71	5.39	3.13	-------	1.23	-------
3	.49	-------	3.32	10.28	-------	-------	5.28	4.43	-------	2.91	1.10	-------
4	.46	-------	2.87	-------	2.96	-------	5.11	4.01	3.12	2.68	1.00	-------
5	.41	.91	3.77	-------	3.52	-------	5.13	3.88	3.05	-------	.96	1.01
6	.39	1.32	5.23	5.30	4.84	6.57	-------	3.73	3.03	-------	-------	-------
7	-------	2.24	-------	4.22	4.12	5.97	8.15	3.55	3.20	3.46	.90	-------
8	-------	2.55	4.07	3.84	3.38	4.87	-------	4.10	3.18	-------	.86	1.12
9	-------	2.16	-------	3.42	3.02	4.10	6.31	8.06	3.83	-------	-------	1.43
10	-------	1.57	6.12	3.22	2.85	-------	6.11	-------	4.18	3.16	.87	2.35
11	-------	-------	6.37	4.42	2.52	-------	5.53	-------	3.78	-------	-------	1.84
12	-------	1.42	5.36	5.76	2.62	-------	-------	11.36	-------	-------	1.39	1.79
13	-------	1.37	4.57	4.72	1.85	3.07	-------	11.11	-------	4.63	-------	-------
14	-------	1.34	-------	3.82	1.47	2.87	-------	-------	-------	-------	1.84	1.38
15	.41	1.32	3.66	3 32	1.67	-------	3.59	-------	-------	4.08	1.37	1.27
16	-------	-------	-------	4.42	1.22	2.64	3.38	5.51	-------	-------	1.12	-------
17	-------	-------	3.12	6.24	1.12	-------	3.00	-------	1.98	-------	.97	1.01
18	.30	1.32	2.84	5.17	1.98	2.88	2.97	4.75	-------	-------	-------	-------
19	-------	-------	2.62	4.17	2.47	3.33	-------	4.87	-------	-------	-------	-------
20	-------	1.25	2.37	3.72	2.72	3.96	-------	4.31	-------	-------	.72	-------
21	-------	-------	2.50	3.12	2.77	4.41	-------	-------	1.84	-------	.59	-------
22	-------	1.15	4.33	2.42	2.47	3.95	-------	4.51	1.77	-------	.54	-------
23	-------	1.14	8.22	2.62	2.17	-------	-------	4.23	1.67	2.29	1.37	1.79
24	-------	-------	7.47	2.68	2.07	-------	-------	3.85	-------	2.46	-------	1.74
25	-------	2.82	5.42	2.97	2.27	4.63	-------	3.53	1.63	2.06	1.79	1.55
26	-------	2.72	-------	2.77	2.31	5.73	-------	3.25	-------	-------	1.24	1.35
27	-------	2.42	4.12	2.47	2.38	7.07	2.42	3.07	-------	-------	1.04	1.20
28	-------	2.12	7.62	2.06	2.54	8.11	2.38	-------	2.38	-------	.88	1.09
29	.72	1.82	7.27	2.72	2.46	16.01	2.95	-------	9.34	-------	.76	1.91
30	.79	4.04	4.93	3.07	-------	14.91	3.56	3.03	-------	1.05	.65	-------
31	.92	-------	-------	3.77	-------	-------	-------	-------	-------	1.18	.60	-------

Note.—Gage height unsatisfactory on days of no record, excepting Mar. 12, and July 16-22, when gage height was not observed. Stage-discharge relation Feb. 12 to Mar. 2 affected by ice.

Daily discharge, in second-feet, of Youghiogheny River at Connellsville, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	110	212	6,000	11,100	2,910	900	10,400	6,970	2,200	3,740	440	100
2	98	190	4,100	7,500	2,300	950	7,500	6,720	2,300	2,400	410	100
3	93	200	2,600	23,100	2,000	1,000	6,470	4,480	2,200	2,010	325	160
4	87	200	2,010	28,000	2,150	2,200	6,000	3,740	2,300	1,740	270	200
5	77	225	3,400	14,000	2,910	6,500	6,000	3,570	2,150	2,200	250	270
6	73	440	6,230	6,470	5,320	10,100	8,500	3,230	2,150	3,200	240	320
7	70	1,200	4,600	4,100	3,920	8,320	15,500	3,070	2,450	2,910	220	360
8	65	1,610	3,920	3,400	2,750	5,540	11,000	3,920	2,450	4,400	204	425
9	65	1,100	4,800	2,750	2,150	3,920	9,200	15,200	3,400	3,200	200	535
10	65	605	8,610	2,450	1,870	3,400	8,610	10,000	4,100	2,450	208	1,320
11	60	550	9,500	4,480	1,490	3,000	6,970	9,000	3,400	1,600	220	830
12	65	500	6,720	7,770	1,300	2,600	4,800	27,300	2,800	1,600	500	790
13	65	470	4,890	5,100	1,100	2,300	4,000	26,200	2,200	4,890	1,400	690
14	70	470	3,800	3,400	1,000	2,010	3,400	14,000	1,600	7,000	830	500
15	77	440	3,230	2,600	950	1,700	3,070	9,500	1,300	3,920	470	410
16	100	440	2,800	4,480	900	1,610	2,750	6,970	1,000	2,600	325	360
17	55	440	2,500	8,900	850	1,600	2,150	5,500	950	1,900	255	270
18	55	440	1,870	6,230	850	2,010	2,150	5,320	900	1,400	200	240
19	65	440	1,610	4,100	850	2,600	2,000	5,540	850	1,200	180	220
20	75	410	1,320	3,230	850	3,740	1,700	4,290	850	1,000	156	200
21	65	380	1,490	2,300	850	4,480	1,700	3,800	830	900	118	260
22	55	352	4,290	1,370	850	3,740	1,600	4,680	750	1,000	105	600
23	50	352	15,500	1,610	850	3,800	1,600	4,100	675	1,260	470	790
24	55	750	13,100	1,740	850	4,400	1,500	3,400	660	1,430	1,200	770
25	95	1,870	6,720	2,150	850	4,890	1,500	2,910	675	1,000	790	605
26	95	1,740	4,200	1,870	850	7,500	1,500	2,450	750	760	410	470
27	80	1,370	3,920	1,420	850	11,800	1,370	2,300	650	550	298	380
28	70	1,050	13,400	1,000	850	15,200	1,370	2,200	1,370	400	212	325
29	156	790	12,400	1,740	850	45,400	2,150	2,200	19,400	320	168	870
30	177	3,740	5,540	2,300	-------	41,000	3,070	2,150	11,000	298	135	5,500
31	230	-------	6,000	3,400	-------	18,000	-------	2,200	-------	380	120	-------

Note.—Discharge estimated Oct. 1, 7-14, 16, 17, 19-28, Nov. 2-4, 11, 16, 17, 19, 21, 24, Dec. 7, 9, 14, 16, 26, 31, Jan. 4, 5, Feb. 3, Mar. 2-5, 10, 11, 15, 17, 23, 24, 31, Apr. 6, 8, 12-14, 19-26, May 10, 11, 14, 15, 17, 21, 28, 29, 31, June 1, 3, 12-16, 18-20, 24, 26, 27, 30, July 2, 5, 6, 8, 9, 11, 12, 14, 26-29, Aug. 1, 6, 9, 11, 13, 18, 19, 24, Sept. 2-4, 6, 7, 13, 16, 18-22 and 30, because of unsatisfactory gage height record; Feb. 12 to Mar. 2, because of ice, and Mar. 12 and July 16-22, because of no gage height record, from weather records, study of gage height graph and comparison with similar studies for Youghiogheny River at Sutersville and records for United States Weather Bureau gage height stations at Confluence and West Newton.

Monthly discharge of Youghiogheny River at Connellsville, for the year ending Sept. 30, 1924.
(Drainage area 1,320 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	230	50	84.5	0.064	0.07
November	3,740	190	766	.580	.65
December	15,500	1,320	5,510	4.17	4.81
January	28,000	1,000	5,620	4.26	4.91
February	5,320	850	1,590	1.20	1.29
March	45,400	900	7,300	5.53	6.38
April	15,500	1,370	4,650	3.52	3.93
May	27,300	2,150	6,670	5.05	5.82
June	19,400	600	2,610	1.98	2.21
July	7,000	298	2,050	1.55	1.79
August	1,400	105	365	.277	.32
September	5,500	100	622	.471	.53
The Year	45,400	50	3,170	2.40	32.71

OHIO BASIN—STATION NO. 25

YOUGHIOGHENY RIVER AT SUTERSVILLE

Location.—At three-span steel highway bridge, Sutersville, Westmoreland County.

Drainage Area.—1,680 square miles.

Records Available.—June 11, 1915, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge. William Pritchard, observer. Elevation of gage zero 733.14 feet, United State Geological Survey datum.

Discharge Measurements.—Made from upstream side of bridge.

Channel and Control.—Right bank is low and subject to overflow; left is high and does not overflow. Bed is composed of shifting sand and gravel overlaying a rocky bed. Control is at a riffle about 400 feet downstream from the gage at right side of stream; probably permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 27.5 feet at 3 a. m. March 30 (discharge, 88,200 second-feet); minimum, 2.26 feet at 3 p. m. October 23 (discharge, 62 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined between 400 and 1,600 second-feet and fairly well defined from 1,600 to 40,000 second-feet. Gage supposed to have been read to hundredths twice daily. Daily mean gage heights were computed from a continuous daily hydrograph, using as many of the observer's gage heights as appeared authentic, in connection with graphs for the Connellsville gaging station and the United States Weather Bureau gage height stations at Confluence and West Newton on the same stream. Daily discharge ascertained by applying daily mean gage height to rating table. Results fair.

Cooperation.—Station is maintained in cooperation with United States Engineer Office, Pittsburgh.

Daily Mean Gage Height, in feet, of Youghiogheny River at Sutersville, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	-------	2.83	7.20	9.80	5.55	4.46	8.85	7.14	-------	6.40	3.26	2.77
2	2.48	2.78	5.88	8.06	5.04	-------	7.38	7.00	-------	-------	3.06	2.72
3	2.41	2.77	5.25	12.86	4.91	-------	6.95	6.12	-------	4.78	-------	2.69
4	-------	-------	4.92	16.08	4.80	5.65	6.68	-------	-------	4.55	3.00	2.92
5	-------	2.78	-------	11.00	5.20	7.70	6.62	-------	-------	4.72	2.93	3.00
6	-------	3.03	-------	7.40	6.18	8.82	7.02	5.40	4.88	5.50	-------	3.12
7	-------	4.08	6.82	6.41	5.75	8.25	10.08	5.20	4.98	5.30	2.85	3.12
8	-------	4.68	6.12	5.80	5.26	7.05	-------	5.75	4.76	6.22	2.85	3.06
9	-------	4.45	6.65	5.48	4.86	6.06	8.18	10.38	5.70	5.60	2.81	3.19
10	2.34	3.88	8.25	5.38	4.62	5.68	7.80	9.40	6.40	5.10	-------	4.21
11	2.31	-------	8.70	6.32	4.58	5.56	7.06	7.97	5.75	4.67	2.81	3.92
12	2.34	3.32	7.55	7.77	4.54	5.24	6.46	13.08	5.38	4.45	2.90	3.52
13	2.32	3.29	6.55	-------	4.44	5.12	6.00	15.01	5.08	5.55	4.28	3.32
14	-------	3.26	6.05	-------	-------	5.04	5.66	10.10	4.88	7.20	3.80	-------
15	2.37	3.19	5.75	5.16	4.08	4.87	5.32	-------	-------	6.25	3.12	3.17
16	2.48	3.11	-------	5.30	3.82	4.72	5.20	7.12	4.14	-------	2.98	3.05
17	2.31	3.16	5.15	8.30	3.80	4.70	5.10	6.70	4.08	4.88	2.88	2.94
18	2.32	-------	4.98	7.19	4.10	4.68	-------	6.45	3.98	4.30	2.81	2.86
19	2.38	3.13	-------	6.08	4.51	5.05	4.90	6.65	3.92	4.16	2.77	2.84
20	2.44	3.12	-------	5.69	5.08	5.65	4.86	6.08	3.89	3.91	2.79	2.81
21	-------	3.10	4.22	-------	5.30	6.45	4.72	5.78	-------	3.78	2.70	2.92
22	2.31	3.10	5.93	5.65	6.15	6.12	4.60	6.15	3.58	-------	2.68	3.17
23	2.27	3.08	-------	6.71	7.05	5.78	4.52	-------	3.50	-------	-------	3.62
24	2.29	3.80	10.53	6.87	7.46	6.08	4.42	-------	3.45	-------	4.25	3.52
25	2.51	-------	7.76	7.53	7.48	6.58	4.38	5.32	3.53	3.95	-------	-------
26	2.47	-------	-------	5.65	7.35	7.27	4.28	5.12	3.68	-------	-------	3.22
27	2.36	4.45	6.15	5.36	6.10	8.91	4.14	-------	3.45	-------	3.42	3.14
28	-------	4.05	8.96	5.28	4.82	9.57	4.04	-------	3.78	3.24	3.17	-------
29	2.69	3.72	10.56	5.29	4.60	17.70	4.54	5.05	9.63	3.16	3.04	3.42
30	2.73	6.30	7.87	5.70	-------	22.62	5.20	5.18	10.33	3.07	2.88	5.92
31	2.81	-------	8.22	6.00	-------	13.18	-------	5.20	-------	3.18	2.84	-------

Note.—Gage height unsatisfactory on days of no record, excepting Oct. 7, 14, 21, 28, Nov. 4, 11, 18 and Dec. 23 when gage height was not observed. Stage-discharge relation Jan. 19-30, Feb. 11-15 and Feb. 18 to Mar. 2 affected by ice.

Daily discharge, in second-feet, of Youghiogheny River at Sutersville, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	130	288	6,840	13,100	3,630	1,200	10,500	6,620	3,000	5,200	615	255
2	124	260	4,200	8,840	2,640	1,490	7,280	6,400	3,000	3,000	440	230
3	103	255	2,940	22,300	2,490	1,600	6,400	4,600	2,800	2,350	400	215
4	100	260	2,490	34,200	2,350	3,630	5,800	3,800	2,600	2,080	400	344
5	95	260	3,800	16,400	2,940	7,940	5,600	3,400	2,600	2,210	351	400
6	95	440	7,000	7,500	4,800	10,500	6,400	3,270	2,490	3,450	320	480
7	90	1,460	6,000	5,200	4,000	9,080	13,900	2,910	2,640	3,100	300	480
8	90	2,210	4,600	4,000	3,100	6,400	12,000	4,000	2,350	4,800	300	440
9	87	1,820	5,600	3,450	2,400	4,600	9,080	14,700	3,810	3,630	276	570
10	82	1,240	9,080	3,270	2,080	3,810	8,160	12,000	5,200	2,790	260	1,580
11	73	850	10,300	5,000	1,800	3,630	6,620	8,600	4,000	2,210	276	1,240
12	82	660	7,720	8,160	1,600	2,940	5,400	22,000	3,270	1,820	330	840
13	76	660	5,600	5,500	1,500	2,790	4,400	29,800	2,790	3,630	1,700	660
14	80	615	4,400	3,600	1,400	2,640	3,810	13,900	2,490	6,840	1,140	550
15	91	570	4,000	2,940	1,200	2,490	3,160	8,000	1,800	4,800	480	525
16	124	480	3,400	3,100	1,140	2,210	2,940	6,600	1,460	3,200	386	440
17	73	525	2,790	9,320	1,140	2,210	2,790	5,800	1,460	2,490	318	358
18	76	500	2,640	6,840	1,000	2,210	2,600	5,200	1,350	1,700	276	306
19	94	525	2,200	4,000	1,000	2,640	2,490	5,600	1,240	1,580	255	294
20	112	480	1,800	2,400	1,000	3,630	2,490	4,600	1,240	1,240	265	276
21	95	480	1,580	1,700	1,000	5,200	2,210	4,000	1,100	1,140	220	344
22	73	480	4,200	2,000	1,000	4,600	2,080	4,800	940	1,000	210	525
23	64	480	15,000	2,400	1,000	4,000	1,950	4,000	840	1,500	1,100	940
24	68	1,140	15,000	2,600	1,000	4,600	1,800	3,600	795	1,800	1,580	840
25	134	2,600	8,160	2,800	1,000	5,600	1,820	3,100	800	1,300	1,200	700
26	121	2,400	5,000	2,200	1,000	7,060	1,700	2,790	1,040	900	900	570
27	88	1,890	4,800	1,800	1,100	10,700	1,460	2,600	795	750	660	525
28	80	1,350	11,000	1,400	1,100	12,500	1,350	2,600	1,140	615	525	480
29	215	1,040	15,200	1,800	1,100	41,000	1,950	2,640	12,500	525	440	750
30	235	5,000	8,380	3,200	-------	63,400	2,940	2,940	14,400	440	318	4,200
31	276	-------	9,080	4,400	-------	23,300	-------	2,940	-------	570	294	-------

Note.—Discharge estimated Oct. 1, 4-6, 8, 9, Nov. 25, 26, Dec. 5, 6, 16, 19, 20, 26, Jan. 13, 14, Mar. 3, Apr. 8, 18, May 4, 5, 15, 23, 24, 27, 28, June 1-5, 15, 21, July 2, 16, 22-24, 26, 27, Aug. 3, 6, 10, 23, 25, 26, Sept. 14, 25 and 28, because of unsatisfactory gage height record; Oct. 7, 14, 21, 28, Nov. 4, 11, 18 and Dec. 23, because of no gage height record, and Jan. 19-30, Feb. 11-15 and Feb. 18 to Mar. 2, because of ice, from weather records, study of gage height graph and comparison with similiar studies for Youghiogheny River at Connellsville and records for United States Weather Bureau gage height stations at Confluence and West Newton.

Monthly discharge of Youghiogheny River at Sutersville, for the year ending Sept. 30, 1924.

(Drainage area 1,680 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	276	64	107	0.064	0.07
November	5,000	255	1,040	.619	.69
December	15,300	1,580	6,290	3.74	4.31
January	34,200	1,400	6,300	3.75	4.32
February	4,800	1,000	1,810	1.08	1.16
March	63,400	1,200	8,370	4.98	5.74
April	13,900	1,350	4,700	2.80	3.12
May	29,800	2,600	6,740	4.01	4.62
June	14,400	795	2,870	1.71	1.91
July	6,840	440	2,350	1.40	1.61
August	1,700	210	533	.317	.37
September	4,200	215	679	.404	.45
The Year	63,400	64	2,500	2.08	28.37

OHIO BASIN—STATION NO. 26

TURTLE CREEK NEAR TRAFFORD

Location.—At single-span steel highway bridge, Blackburn Station, Pennsylvania Railroad, about one and a quarter miles northeast of Trafford, Westmoreland County.

Drainage Area.—55 square miles.

Records Available.—July 28, 1914, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge. S. T. Churchfield, observer.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of hardpan and gravel; not subject to change. Control is at a riffle about 50 feet downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 6.2 feet at 5 a. m. June 29 (discharge, about 3,600 second-feet); minimum, 0.39 foot at 6.40 a. m. June 23 (discharge, 1.8 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined below 300 second-feet. Gage supposed to have been read to hundredths twice daily. Daily mean gage heights were computed from a continuous daily hydrograph, using as many of the observer's gage heights as appeared authentic, in connection with graphs for Ursina, Blacklick, Carlton, Hileman's Farm, Sharon, Wurtemburg and Carnegie stations. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for high stages and estimated periods when they are fair.

Daily Mean Gage Height, in feet, of Turtle Creek near Trafford, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	0.76	0.47	1.63	2.30	1.92	1.75	2.57	1.17	1.51	2.32	-------	-------
2	.73	.45	1.53	2.12	1.75	1.70	2.22	1.12	1.45	2.02	-------	-------
3	.70	.42	1.44	3.77	1.70	1.66	2.02	1.65	1.41	1.82	-------	-------
4	.67	.45	1.38	2.57	1.66	1.90	1.82	1.16	1.34	1.68	-------	-------
5	.65	.52	1.92	1.92	1.90	2.57	1.74	1.12	1.22	1.71	-------	-------
6	.63	.56	-------	1.75	1.71	2.07	1.72	1.08	1.09	-------	-------	-------
7	.60	.69	-------	1.63	1.58	1.75	1.81	.99	1.00	-------	-------	-------
8	.56	.74	-------	1.61	1.54	1.60	1.90	1.11	1.00	-------	-------	-------
9	.53	.72	-------	1.55	1.50	1.50	1.89	2.00	1.03	-------	-------	-------
10	.51	.68	2.07	1.60	1.45	1.41	1.83	2.04	.91	1.36	-------	-------
11	.49	.64	1.78	2.61	1.31	1.52	1.75	2.61	.92	-------	-------	-------
12	.47	.59	1.54	2.11	1.24	1.45	1.67	3.82	.85	-------	-------	-------
13	.45	.54	1.46	1.53	1.19	1.39	1.58	3.12	.77	-------	-------	-------
14	.43	.51	1.40	1.46	1.12	1.22	1.42	2.72	.70	-------	-------	-------
15	.50	.49	1.30	1.42	1.05	-------	1.22	2.47	.63	-------	-------	-------
16	.49	.47	1.24	2.36	.96	-------	1.02	2.21	.59	-------	-------	-------
17	.47	.46	1.20	2.47	.92	-------	.85	2.09	.53	-------	-------	-------
18	.45	.49	1.16	1.82	.89	-------	1.02	2.08	.53	-------	-------	-------
19	.45	.47	1.13	1.59	.93	-------	1.11	2.18	.54	-------	-------	-------
20	.45	.45	1.17	1.53	1.81	-------	1.14	2.10	.50	-------	-------	.80
21	.43	.43	1.46	1.62	1.95	-------	1.11	1.92	.46	-------	-------	1.04
22	.41	.42	2.52	2.39	1.88	-------	1.06	1.80	.42	-------	-------	1.52
23	.41	.46	2.97	2.74	1.83	1.47	.99	1.74	.55	-------	-------	1.61
24	.46	.52	2.07	2.59	1.70	1.64	.90	1.68	.68	-------	-------	1.53
25	.50	.50	1.79	2.78	1.46	1.71	.81	1.63	.64	-------	-------	1.46
26	.49	.57	1.68	2.95	1.62	-------	.72	1.56	.60	-------	-------	1.39
27	.47	.66	1.58	2.89	2.32	-------	.68	1.52	.56	-------	-------	.87
28	.46	.75	2.22	2.84	2.07	2.02	.63	1.48	1.57	-------	-------	1.29
29	.49	.91	1.91	2.78	1.85	-------	.67	1.53	4.68	-------	-------	2.81
30	.49	1.97	1.75	2.37	-------	-------	.70	1.60	2.89	-------	-------	2.51
31	.49	-------	2.27	2.12	-------	-------	-------	1.57	-------	-------	-------	-------

Note.—Gage height unsatisfactory on days of no record. Stage-discharge relation Jan. 21 to Feb. 4 and Feb. 19 to Mar. 2 affected by ice.

Daily discharge, in second-feet, of Turtle Creek near Trafford, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	8.7	2.5	144	417	55	46	546	49	112	417	8	4
2	7.4	2.3	117	323	70	85	369	43	98	279	6	4
3	6.4	2.1	96	1,350	85	153	279	34	89	207	4	4
4	5.6	2.3	83	546	140	237	207	48	76	159	3	4
5	5.2	3.1	245	245	237	546	179	43	56	168	3	4
6	4.8	3.6	420	182	168	301	172	38	39	140	4	4
7	4.2	6.2	500	159	130	182	203	27	28	100	11	4
8	3.6	7.8	440	138	119	135	237	41	28	160	6	3
9	3.2	7.0	360	125	109	109	233	279	32	120	5	3
10	2.9	5.9	301	135	98	89	210	301	25	80	4	4
11	2.7	5.0	192	573	71	112	182	573	20	55	3	4
12	2.5	4.0	119	323	59	98	156	1,350	14	40	3	4
13	2.3	3.3	100	117	52	85	130	873	9.2	28	4	4
14	2.2	2.9	87	100	43	56	91	629	6.4	20	3	4
15	2.8	2.7	69	91	34	55	56	493	4.8	15	3	4
16	2.7	2.5	59	442	24	50	30	369	4.0	11	3	4
17	2.5	2.4	53	493	20	48	14	323	3.2	8	5	4
18	2.3	2.7	48	207	17	46	30	323	3.2	7	4	4
19	2.3	2.5	44	132	18	46	41	360	3.3	6	4	4
20	2.3	2.3	49	117	18	50	45	323	2.8	6	3	11
21	2.2	2.2	48	100	18	55	41	245	2.4	6	3	33
22	2.0	2.1	519	85	18	70	35	199	2.1	6	4	114
23	2.0	2.4	778	70	18	102	27	179	3.5	18	11	138
24	2.4	3.1	301	60	18	147	18	159	5.9	6	40	117
25	2.8	2.8	196	55	18	168	12	144	5.0	5	28	100
26	2.7	3.7	159	46	18	280	7.0	125	4.2	4	18	85
27	2.5	5.4	130	40	18	280	5.9	114	3.6	4	11	16
28	2.4	8.2	369	40	28	279	4.8	105	127	3	6	67
29	2.7	19	241	34	34	450	5.6	117	2,030	3	5	687
30	2.7	266	182	55	-------	550	6.4	135	747	3	4	519
31	2.7	-------	393	55	-------	300	-------	127	-------	4	4	-------

Note.—Discharge estimated Dec. 6-9, because of unsatisfactory gage height record, and Jan. 21 to Feb. 4 and Feb. 19. to Mar. 2, because of ice from weather records, study of gage height graph and comparison with similar studies for Laurel Hill Creek at Ursina, Blacklick Creek at Blacklick, French Creek at Carlton, Crooked Creek at Hileman's Farm, Shenango River at Sharon and Slippery Rock Creek at Wurtemburg, and Mar. 15-22, 26, 27, 29-31, July 6-9, July 11 to Sept 19, because of unsatisfactory gage height record, from discharge of Blacklick Creek at Blacklick and Chartiers Creek at Carnegie.

Monthly discharge of Turtle Creek near Trafford, for the year ending Sept. 30, 1924.

(Drainage area 55 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	8.7	2.0	3.35	0.061	0.07
November	266	2.1	12.9	.235	.26
December	778	44	221	4.02	4.64
January	1,350	34	221	4.02	4.64
February	237	17	60.5	1.10	1.19
March	550	46	168	3.05	3.52
April	546	4.8	119	2.16	2.41
May	1,350	27	264	4.80	5.53
June	2,030	2.1	119	2.16	2.41
July	417	3	67.4	1.23	1.42
August	40	3	7.19	.131	.15
September	687	3	65.4	1.19	1.33
The Year	2,030	2.0	111	2.02	27.57

OHIO BASIN—STATION NO. 27

CHARTIERS CREEK AT CARNEGIE

Location.—At single-span steel railroad bridge, known as Freight House Bridge, siding of the Chartiers Branch, Pennsylvania Railroad, Carnegie, Allegheny County.

Drainage Area.—260 square miles.

Records Available.—June 5, 1915, to September 30, 1924.

Gage.—Standard chain attached to downstream side of Freight House Bridge; read by F. J. Wenger.

Discharge Measurements:—Made from downstream side of Freight House Bridge, upstream side of Branch Line Bridge about 100 feet upstream from the gage, or by wading.

Channel and Control.—Both banks are high and not subject to overflow. Bed is composed of mud and slag over a rocky floor. Control is at the first of a series of riffles about 600 feet downstream from the gage; practically permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph 10.1 feet at 5 a. m. June 29 (discharge, about 6,400 second-feet); minimum, 1.60 feet at 3 p. m. October 8 (discharge, 33 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve fairly well defined below 2,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results fair.

Cooperation.—Station is maintained in cooperation with United States Engineer Office, Pittsburgh.

Daily Mean Gage Height, in feet, of Chartiers Creek at Carnegie, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.62	1.82	3.67	5.95	2.90	3.55	4.37	4.94	3.30	3.25	2.25	1.91
2	1.70	1.74	2.96	4.75	2.78	3.33	4.18	4.15	3.23	2.98	2.16	2.05
3	1.72	1.71	2.81	7.94	2.78	3.53	4.07	3.56	3.16	2.71	2.14	2.01
4	1.70	1.86	2.71	6.37	2.76	4.20	3.87	4.47	3.02	2.75	2.05	1.96
5	1.70	2.22	4.30	4.79	3.06	6.62	3.73	3.96	2.87	3.22	2.07	2.10
6	1.70	2.22	5.05	3.77	3.91	4.39	4.11	3.64	3.29	2.80	2.07	2.11
7	1.68	2.25	5.05	3.95	3.22	3.94	4.25	3.44	3.00	4.29	2.11	1.98
8	1.62	2.52	3.87	3.70	2.93	3.51	4.42	3.41	2.91	3.53	2.38	1.90
9	1.70	2.25	4.03	3.62	2.80	3.25	4.40	3.68	3.17	3.27	2.26	1.95
10	1.70	2.06	4.79	3.70	2.88	3.26	4.63	3.50	2.89	3.06	2.08	2.06
11	1.70	2.00	4.35	6.77	2.78	3.47	4.12	3.68	2.75	2.90	2.02	2.08
12	1.66	1.91	3.87	5.28	2.77	3.33	3.86	7.47	2.70	2.72	2.01	2.05
13	1.65	1.86	3.60	4.04	2.64	3.21	3.66	6.46	2.81	2.86	2.00	2.01
14	1.70	1.84	3.62	3.74	2.62	3.54	3.57	5.56	2.72	2.69	1.97	1.95
15	1.70	1.82	3.27	3.52	2.52	3.33	3.38	5.09	2.51	2.61	2.00	1.96
16	1.70	1.81	3.23	6.87	2.50	3.17	3.24	4.63	2.44	2.54	1.97	1.97
17	1.76	1.83	3.11	6.47	2.54	3.31	3.19	4.40	2.43	2.54	2.11	1.91
18	1.68	1.82	3.07	4.51	2.47	3.57	3.60	4.72	2.46	2.45	1.97	1.86
19	1.68	1.80	3.01	4.06	2.58	3.63	3.86	4.63	2.63	2.38	1.92	1.86
20	1.65	1.78	2.97	3.91	5.44	3.86	3.48	4.42	2.45	2.36	2.02	1.91
21	1.68	1.77	3.17	3.34	4.15	3.87	3.37	4.05	2.35	2.34	2.05	2.50
22	1.66	1.76	7.05	3.31	3.15	3.87	3.42	3.80	2.27	2.42	2.01	3.01
23	1.69	1.98	7.41	3.42	2.74	5.45	3.24	3.61	2.35	2.92	3.21	2.61
24	2.01	2.20	5.13	3.22	2.65	5.82	3.15	3.60	2.35	2.46	3.46	2.13
25	2.12	2.16	4.39	3.94	2.75	5.74	3.13	3.51	2.28	2.32	2.59	2.00
26	1.92	2.25	4.07	3.56	2.71	6.15	3.00	3.31	2.17	2.26	2.41	1.99
27	1.80	2.81	4.03	2.86	3.20	5.43	2.94	3.26	2.09	2.20	2.19	1.98
28	1.74	2.47	5.73	2.96	3.69	4.87	3.00	3.17	2.70	2.16	2.26	3.18
29	1.73	2.39	4.77	3.07	3.67	8.37	3.68	3.27	7.57	2.14	2.04	7.32
30	1.80	3.58	4.29	3.45	-------	6.31	3.47	4.21	4.06	2.15	1.97	6.33
31	1.80	-------	5.90	3.22	-------	4.69	-------	3.72	-------	2.34	1.95	-------

Note.—Stage-discharge relation Jan. 7, 8, 20 and 23-26 affected by ice.

Daily discharge, in second-feet, of Chartiers Creek at Carnegie, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	35	54	560	2,050	260	510	930	1,260	460	380	112	64
2	42	46	275	1,200	230	420	840	810	380	290	97	82
3	44	43	230	3,770	220	510	785	510	342	245	94	76
4	42	59	205	2,370	218	900	680	1,030	280	218	82	70
5	42	106	900	1,200	308	2,540	610	710	245	360	84	88
6	42	106	1,330	610	685	960	785	560	460	230	84	90
7	40	112	1,330	480	360	710	840	462	290	900	90	73
8	35	160	600	480	275	485	900	440	260	510	136	63
9	42	112	735	535	230	380	900	585	342	380	113	69
10	42	83	1,200	585	260	380	1,080	485	260	308	85	83
11	42	75	960	2,720	230	462	785	585	218	260	78	85
12	38	64	690	1,540	218	420	660	3,370	205	205	76	82
13	38	59	535	735	192	360	560	2,450	230	245	75	76
14	42	56	535	610	180	510	510	1,750	205	205	71	69
15	42	54	380	485	160	420	440	1,400	160	180	75	70
16	42	53	380	2,810	160	342	280	1,080	148	170	71	71
17	48	55	325	2,450	170	400	360	960	146	170	90	64
18	40	54	308	1,020	154	510	535	1,140	152	150	71	59
19	40	52	290	785	180	520	660	1,080	192	136	65	58
20	38	50	275	550	1,610	660	485	900	150	132	78	64
21	40	49	342	420	810	660	420	735	130	128	82	160
22	38	48	2,900	400	342	660	440	635	115	144	76	290
23	41	73	3,270	320	218	1,610	380	535	130	260	360	180
24	76	103	1,400	300	192	1,890	342	535	130	152	462	92
25	91	97	960	260	218	1,820	342	485	117	124	180	75
26	65	112	785	240	205	2,210	290	400	98	113	142	74
27	52	230	735	245	360	1,610	275	380	87	103	102	73
28	46	154	1,820	275	585	1,260	290	342	205	97	113	360
29	45	138	1,200	308	560	4,300	585	380	3,470	94	80	3,170
30	52	535	900	462	-------	2,290	462	840	785	96	71	2,290
31	52	-------	1,970	360	-------	1,140	-------	585	-------	128	69	-------

Note.—Discharge Jan. 7, 8, 20 and 23-26 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Raccoon Creek at Moffatt's Mill and South Fork Ten Mile Creek at Pollock's Mill.

Monthly discharge of Chartiers Creek at Carnegie, for the year ending Sept. 30, 1924.

(Drainage area 260 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	91	35	45.6	0.175	0.20
November	535	43	9.97	.383	.43
December	3,270	205	915	3.52	4.06
January	3,770	240	986	3.79	4.37
February	1,610	154	389	1.30	1.40
March	4,360	342	1,030	3.96	4.56
April	1,080	275	589	2.27	2.53
May	3,370	342	887	3.41	3.93
June	3,470	87	343	1.32	1.47
July	900	94	228	.877	1.01
August	462	65	112	.431	.50
September	3,170	59	274	1.05	1.17
The Year	4,360	35	490	1.88	25.63

OHIO BASIN—STATION NO. 28

SHENANGO RIVER NEAR JAMESTOWN

Location.—At two-span steel highway bridge, known as Frye Bridge, about one and one-half miles downstream from Jamestown, Mercer County.

Drainage Area.—182 square miles.

Records Available.—December 2, 1919, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read by Hugh P. McClimans. Elevation of gage zero 955.00 feet, United States Geological Survey datum.

Discharge Measurements.— Made from downstream side of bridge or by wading.

Channel and Control.—Right bank in low and overflow begins at a stage of 7 feet; left is high and not subject to overflow. Bed is composed of gravel and boulders. Control is at a riffle about 50 feet downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 7.4 feet at midnight May 10-11 (discharge, about 2,030 second-feet); minimum, 1.13 feet at 5.30 p. m. October 6 (discharge, 3.9 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve fairly well defined below 1,600 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results fair.

The following discharge measurement was made by R. J. Ferris: No. 33, August 27: Gage height, 2.00 feet; discharge, 111 second-feet.

Daily Mean Gage Height, in feet, of Shenango River near Jamestown, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Juiy	Aug.	Sept.
1	1.20	1.40	2.36	3.90	4.08	1.94	4.00	2.17	1.90	3.74	1.34	1.49
2	1.20	1.34	2.34	3.60	4.38	1.94	3.47	2.08	1.86	4.02	1.30	1.84
3	1.20	1.34	2.62	4.54	4.37	1.94	3.05	2.03	1.81	3.59	1.34	1.70
4	1.18	1.39	2.63	3.94	4.22	2.10	2.79	2.41	1.81	3.38	1.33	1.60
5	1.16	1.44	3.19	3.74	5.11	4.21	2.60	2.21	1.77	3.26	1.35	1.67
6	1.16	1.44	4.39	3.66	4.96	4.27	2.67	2.16	1.73	3.01	1.36	1.64
7	1.16	1.48	5.29	3.78	4.38	4.08	2.65	2.16	1.69	4.05	1.42	1.67
8	1.15	1.59	5.92	3.58	4.38	4.37	2.69	2.43	1.69	4.06	1.48	1.67
9	1.14	1.60	5.18	3.10	3.81	4.15	2.72	4.06	1.76	3.99	1.41	1.93
10	1.16	1.60	4.48	2.88	3.14	3.70	2.74	6.64	1.73	3.69	1.36	2.70
11	1.18	1.63	3.94	6.88	2.98	3.25	2.56	6.60	1.69	3.20	1.35	2.55
12	1.16	1.60	3.52	6.49	2.53	3.06	2.49	5.07	1.64	3.39	1.33	2.55
13	1.18	1.60	3.34	6.57	2.49	3.10	2.38	4.47	1.61	3.46	1.33	3.19
14	1.20	1.60	3.66	4.96	2.42	3.24	2.24	4.27	1.57	3.46	1.33	3.08
15	1.18	1.59	3.60	4.04	2.25	3.17	2.14	4.45	1.53	3.19	1.32	2.88
16	1.18	1.55	3.52	4.74	2.55	3.03	2.07	4.13	1.52	3.00	1.32	2.66
17	1.17	1.56	3.26	5.49	2.24	2.83	1.98	3.77	1.49	2.80	1.33	2.51
18	1.19	1.51	2.91	5.28	2.05	2.62	2.77	3.37	1.46	2.56	1.28	2.38
19	1.20	1.50	2.60	5.11	3.15	2.55	3.05	3.08	1.43	2.34	1.29	2.20
20	1.22	1.50	2.47	3.71	3.12	2.47	2.84	2.75	1.41	2.13	1.32	2.09
21	1.21	1.49	2.56	3.28	3.12	2.50	3.18	2.55	1.39	1.95	1.31	2.07
22	1.18	1.46	3.63	4.50	3.08	2.72	3.49	2.43	1.37	1.92	1.31	2.29
23	1.20	1.52	3.68	4.32	2.68	3.15	3.50	2.27	1.37	1.82	1.87	2.26
24	1.29	1.53	3.91	3.69	2.30	3.27	3.77	2.13	1.33	1.71	1.81	2.10
25	1.35	1.56	4.06	-------	2.26	3.37	3.37	2.16	2.83	1.64	1.99	2.02
26	1.38	1.73	3.80	3.38	2.20	3.49	2.81	2.09	2.67	1.56	2.09	1.99
27	1.40	1.93	3.64	3.19	2.06	3.63	2.39	2.04	2.09	1.50	2.03	1.98
28	1.40	1.82	4.21	3.14	2.02	3.85	2.16	2.03	2.26	1.46	1.88	2.22
29	1.37	1.88	3.68	3.22	2.00	4.17	2.11	2.07	3.66	1.43	1.72	5.19
30	1.39	2.34	3.82	4.01	-------	4.35	2.08	2.09	3.03	1.41	1.58	5.65
31	1.39	-------	4.06	4.28	-------	4.27	-------	1.98	-------	1.38	1.41	-------

Note.—Stage-discharge relation Jan. 6-9, Jan. 21 to Feb. 3, Feb. 11 and Feb. 13 to Mar. 1 affected by ice. Gage height Jan. 25 not observed.

Daily discharge, in second-feet, of Shenango River near Jamestown, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	6.5	20	180	640	300	85	640	138	88	540	15	29
2	6.5	15	180	510	280	96	480	127	81	640	12	77
3	6.5	15	235	815	280	96	330	117	72	510	15	55
4	5.6	19	246	605	710	127	280	191	72	450	14	41
5	4.9	24	390	540	1,040	710	235	148	66	420	16	51
6	4.9	24	780	480	1,000	745	246	138	60	330	17	47
7	4.9	28	1,120	420	780	675	246	138	54	640	22	51
8	4.6	40	1,360	400	780	780	257	202	54	675	28	51
9	4.2	41	1,080	340	570	710	257	675	64	640	21	94
10	4.9	41	815	304	360	540	268	1,640	60	540	17	257
11	5.6	45	605	1,780	280	390	224	1,640	54	390	16	224
12	4.9	41	480	1,600	224	360	213	1,040	47	450	14	224
13	5.6	41	420	1,640	190	360	191	815	42	480	14	390
14	6.5	41	540	1,000	170	390	158	745	38	480	14	360
15	5.6	40	510	640	150	390	138	780	33	390	14	304
16	5.6	36	480	885	140	330	117	675	32	330	14	246
17	5.2	37	420	1,200	130	292	103	570	29	280	14	213
18	6.0	31	304	1,120	120	235	268	450	26	224	11	191
19	6.5	30	235	1,040	110	224	330	360	23	180	11	148
20	7.4	30	202	540	100	202	292	268	21	138	14	127
21	6.9	29	224	240	100	213	390	224	19	98	13	117
22	5.6	26	510	300	90	257	480	202	18	92	13	169
23	6.5	32	540	260	90	390	480	158	18	74	83	158
24	11	33	605	240	80	420	570	138	14	56	72	127
25	16	37	675	220	80	450	450	138	292	47	105	107
26	18	60	570	160	80	480	280	127	246	37	127	105
27	20	94	510	130	80	510	191	117	127	30	117	103
28	20	74	710	130	80	570	138	117	158	26	84	148
29	18	84	540	150	80	710	127	117	540	23	58	1,080
30	19	180	570	240	-------	780	127	127	330	21	39	1,240
31	19	-------	675	360	-------	745	-------	103	-------	18	21	-------

Note.—Discharge Jan. 6-9, Jan. 21 to Feb. 3, Feb. 11 and Feb. 13 to Mar 1 estimated, because of ice, from weather records, study of gage height graph and comparison with similar studies for Shenango River at Sharon.

Monthly discharge of Shenango River near Jamestown, for the year ending Sept. 30, 1924.
(Drainage area 182 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	20	4.2	8.79	0.048	0.06
November	180	15	42.9	.236	.26
December	1,360	180	539	2.96	3.41
January	1,780	130	617	3.39	3.91
February	1,040	80	292	1.60	1.73
March	780	85	428	2.35	2.71
April	640	103	284	1.56	1.74
May	1,640	103	401	2.20	2.54
June	540	14	92.6	.509	.57
July	675	18	298	1.64	1.89
August	127	11	33.7	.185	.21
September	1,240	29	218	1.20	1.34
The Year	1,780	4.2	272	1.49	20.37

OHIO BASIN—STATION NO. 29

SHENANGO RIVER AT SHARON

Location.—At single-span steel highway bridge, Chestnut Street, Sharon, Mercer County.

Drainage Area.—611 square miles.

Records Available.—August 1, 1909, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by H. H. Gerber. Elevation of gage zero 840.00 feet, United States Geological Survey datum.

Discharge Measurements.—Made from the Mill, Chestnut or State Street Bridges or by wading.

Channel and Control.—Banks become inundated at a stage of about 12 feet. Bed is composed of silt and gravel. Control is a water main, backed with gravel and boulders, about one-quarter of a mile downstream from the gage; probably permanent.

Extremes of Discharge.—Maximum stage during the year, 10.80 feet observed at 5 p. m. January 12 (discharge, 7,340 second-feet); minimum, 1.8 feet at 8 a. m. October 18 and from 5 p. m. October 22 to 5 p. m. October 24 (discharge, 10 second-feet).

Ice.—Water from this stream is used for industrial purposes and returned to the river at sufficiently high temperature to usually prevent the formation of ice for a considerable distance downstream from the station.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined below 2,000 second-feet; fairly well defined between 2,000 and 5,000 second-feet and well defined between 5,000 and 9,000 second-feet. Gage read twice daily to tenths October 1 to February 20 and to hundredths since that date. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for extremely low stages when they are fair.

Cooperation.—Station is maintained in cooperation with Carnegie Steel Company, Farrell.

The following discharge measurement was made by R. J. Ferris: No. 113, August 26: Gage height, 2.85 feet; discharge, 225 second-feet.

Daily Mean Gage Height, in feet, of Shenango River at Sharon, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.05	2.1	4.9	6.15	4.65	2.89	5.66	3.60	3.33	5.14	2.22	2.54
2	2.0	2.1	4.05	-------	4.3	2.93	5.30	3.64	3.15	4.86	2.20	2.61
3	1.95	2.1	3.75	-------	4.25	3.07	5.05	3.32	3.10	4.78	2.14	2.80
4	2.0	2.15	3.85	6.85	4.65	3.77	4.44	4.01	3.15	4.71	2.11	2.78
5	2.0	2.25	4.95	5.4	5.4	5.97	4.02	4.16	3.08	4.74	2.13	2.82
6	1.95	2.4	7.15	5.2	7.35	6.46	3.83	3.64	3.01	4.44	2.23	2.72
7	1.95	2.35	7.95	5.35	7.0	6.47	4.45	3.29	2.89	4.42	2.28	2.60
8	2.0	2.45	7.65	5.15	5.75	6.07	4.38	3.38	2.90	5.09	2.23	2.53
9	1.9	2.6	7.55	4.85	5.0	5.52	4.36	6.43	3.43	5.01	2.25	2.76
10	1.9	2.65	6.65	4.8	4.3	5.22	4.35	7.75	3.22	4.56	2.22	3.66
11	1.95	2.65	5.9	8.7	4.05	5.07	4.12	7.35	2.99	4.26	2.17	4.14
12	1.95	2.4	5.1	10.65	3.9	4.89	3.84	6.79	2.86	4.06	2.16	3.74
13	1.9	2.5	5.05	8.8	3.7	4.51	3.74	6.85	2.77	4.32	2.13	3.88
14	1.9	2.35	5.75	6.95	3.55	4.59	3.58	6.73	2.72	4.55	2.13	4.68
15	1.9	2.35	5.35	5.75	3.45	4.47	3.38	6.70	2.61	4.06	2.15	4.42
16	1.9	2.3	4.75	6.5	3.35	4.27	3.25	6.08	2.51	3.84	2.11	4.14
17	1.9	2.35	4.4	9.55	3.3	3.99	3.18	5.48	2.47	3.68	2.14	3.90
18	1.85	2.3	4.35	7.8	3.2	3.89	3.66	5.56	2.46	3.52	2.11	3.63
19	1.95	2,25	4.0	6.4	3.1	3.81	5.70	5.47	2.39	3.33	2.11	3.40
20	1.9	2.3	3.75	5.35	3.0	3.79	5.46	4.83	2.42	3.12	2.17	3.20
21	1.9	2.3	3.9	4.6	2.95	3.85	4.69	4.29	2.37	3.01	2.21	3.15
22	1.85	2.25	4.8	4.3	2.88	3.98	4.88	3.93	2.30	2.98	2.13	3.20
23	1.8	2.35	6.4	4.25	2.91	3.75	5.04	3.66	2.26	3.20	2.32	3.50
24	1.8	2.4	6.05	3.95	2.89	5.08	4.78	3.50	2.24	3.04	2.61	3.34
25	1.9	2.5	5.9	3.65	2.83	4.98	4.62	3.58	3.12	2.88	2.51	3.16
26	2.05	2.6	5.65	3.3	2.89	5.28	4.14	3.65	4.42	2.64	2.74	3.02
27	2.0	3.4	5.35	3.3	2.79	5.88	3.82	3.37	4.30	2.52	3.06	2.95
28	2.0	3.3	6.55	3.25	2.85	6.07	3.44	3.33	3.82	2.42	3.07	3.23
29	2.1	3.0	6.2	3.2	2.87	6.46	3.25	3.38	5.02	2.36	2.90	6.62
30	2.1	3.9	5.8	3.85	-------	7.31	3.24	3.65	5.67	2.32	2.74	8.96
31	2.1	-------	5.55	4.9	-------	6.26	-------	3.49	-------	2.28	2.70	-------

Note.—Gage height Jan. 2 and 3 unsatisfactory. Stage-discharge relation Jan. 7 and 8 affected by ice.

Daily discharge, in second-feet, of Shenango River at Sharon, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	32	39	1,260	2,160	1,080	233	1,800	545	424	1,380	56	120
2	26	39	745	1,600	910	248	1,520	570	336	1,260	53	139
3	21	39	620	2,000	855	295	1,320	401	315	1,200	45	201
4	26	46	670	2,640	1,080	620	965	745	336	1,140	40	194
5	26	61	1,320	1,590	1,590	2,010	745	855	315	1,140	43	208
6	21	87	3,000	1,450	3,180	2,400	670	570	275	965	58	174
7	21	78	3,790	1,300	2,820	2,400	965	401	233	965	66	136
8	26	98	3,380	1,300	1,870	2,080	965	447	271	1,380	58	117
9	16	136	3,380	1,200	1,320	1,660	965	2,320	471	1,320	61	187
10	16	152	2,480	1,200	910	1,450	965	3,580	357	1,080	56	570
11	21	152	1,940	4,570	745	1,380	800	3,180	271	910	49	800
12	21	87	1,380	7,040	695	1,260	670	2,640	223	800	47	620
13	16	109	1,320	4,690	595	1,020	620	2,640	191	910	43	695
14	16	78	1,870	2,820	520	1,080	545	2,560	174	1,080	43	1,140
15	16	78	1,590	1,870	471	1,020	447	2,560	139	800	46	965
16	16	69	1,200	2,400	424	910	379	2,080	112	670	40	800
17	16	78	965	5,660	401	745	357	1,660	102	595	45	695
18	13	69	965	3,580	357	695	570	1,730	100	495	40	570
19	21	61	745	2,320	315	645	1,800	1,660	85	424	40	447
20	16	69	620	1,590	275	645	1,660	1,200	91	315	49	357
21	16	69	695	1,080	256	670	1,140	910	82	275	55	336
22	13	61	1,200	910	230	745	1,260	720	69	267	43	357
23	10	78	2,320	855	241	620	1,320	570	63	357	73	495
24	10	87	2,010	720	233	1,380	1,200	495	59	295	139	424
25	16	109	1,940	570	212	1,320	1,080	545	315	230	112	336
26	32	136	1,730	401	233	1,520	800	570	965	148	181	275
27	26	447	1,590	401	198	1,940	645	424	910	114	295	256
28	26	401	2,480	379	219	2,080	471	424	645	91	295	424
29	39	275	2,160	357	226	2,400	379	447	1,320	80	237	2,480
30	39	695	1,870	670	-------	3,090	379	570	1,800	73	181	4,930
31	39	-------	1,730	1,260	-------	2,240	-------	495	-------	66	167	-------

Note.—Discharge estimated Jan. 2 and 3, because of unsatisfactory gage height record, and Jan. 7 and 8, because of ice, from weather records, study of gage height graph and comparison with similar studies for Shenango River at Jamestown and New Castle.

Monthly discharge of Shenango River at Sharon, for the year ending Sept. 30, 1924.

(Drainage area 611 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	39	10	21.6	0.035	0.04
November	695	39	133	.218	.24
December	3,790	620	1,710	2.80	3.23
January	7,040	357	1,950	3.19	3.68
February	3,180	198	775	1.27	1.37
March	3,090	233	1,320	2.16	2.49
April	1,800	357	913	1.49	1.66
May	3,580	401	1,240	2.03	2.34
June	1,800	59	368	.602	.67
July	1,380	66	672	1.10	1.27
August	295	40	88.9	.145	.17
September	4,930	117	648	1.06	1.18
The Year	7,040	10	824	1.35	18.34

OHIO BASIN—STATION NO. 30

SHENANGO RIVER AT NEW CASTLE

Location.—At two-span steel highway bridge, West Washington Street, New Castle, Lawrence County.

Drainage Area.—797 square miles.

Records Available.—January 1, 1910, to September 30, 1924.

Gage.—Standard chain attached to upstream side of bridge; read by J. L. Moseley. Elevation of gage zero 787.00 feet, United States Geological Survey datum.

Dischage Measurements.—Made from upstream side of bridge or by wading.

Channel and Control.—Banks are high and not subject to overflow. Bed is composed of gravel and rock. Control is at a riffle, at the head of a low island, about 300 feet downstream from gage; practically permanent.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 8.5 feet at 3 p. m. January 12 (discharge, 8,560 second-feet); minimum, 0.59 foot at 5.10 p. m. October 17 (discharge, 20 second-feet).

Ice.—Stage-discharge relation seldom affected by ice.

Diversion.—Water supply for the City of New Castle is taken from the river about one and one-half-miles upstream from the gage.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve fairly well defined. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good.

Daily Mean Gage Height, in feet, of Shenango River at New Castle, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.09	0.97	3.41	4.55	3.16	1.69	4.43	2.30	2.01	3.35	1.10	1.22
2	.99	.90	2.99	3.98	2.93	1.74	3.70	2.36	1.86	3.01	.98	1.24
3	.95	.95	2.60	4.08	2.89	1.86	3.20	2.16	1.82	2.95	.90	1.29
4	.88	.96	2.56	5.14	2.91	2.71	2.98	2.54	1.87	2.68	.88	1.42
5	.83	1.19	2.69	4.18	3.63	4.23	2.70	3.05	1.83	2.81	.97	1.42
6	.81	1.19	4.42	-------	5.39	4.82	2.68	3.19	1.80	2.89	.97	1.29
7	.80	1.35	6.06	-------	5.36	4.68	2.97	2.16	1.64	2.78	.91	1.25
8	.74	1.37	5.84	-------	4.13	4.22	2.97	2.07	1.83	3.46	.84	1.19
9	.71	1.33	5.49	-------	3.63	3.79	3.12	3.82	2.24	3.34	.89	1.26
10	.71	1.49	5.32	-------	3.21	3.61	3.22	5.01	2.04	2.97	.83	1.59
11	.75	1.50	4.36	5.25	3.01	3.50	2.78	5.20	1.92	2.63	.88	2.45
12	.73	1.42	3.79	8.36	2.57	3.41	2.70	5.16	1.86	2.49	.90	2.41
13	.71	1.37	3.42	7.72	2.35	3.14	2.48	5.38	1.60	2.75	.91	2.45
14	.71	1.36	4.24	6.10	2.17	3.04	2.24	5.19	1.50	2.83	.81	3.07
15	.68	1.28	3.79	4.32	2.08	2.93	2.09	5.21	1.36	2.47	.77	2.83
16	.66	1.30	-------	4.34	1.92	2.69	1.90	4.55	1.30	2.23	.76	2.56
17	.61	1.37	3.16	6.69	1.86	2.55	1.85	4.07	1.26	2.11	.77	2.36
18	.64	1.27	2.99	6.40	1.88	2.37	2.37	3.98	1.22	1.99	.74	2.10
19	.68	1.23	2.69	5.24	1.80	2.28	4.19	4.33	1.19	1.84	.78	1.90
20	.65	1.23	2.44	4.17	1.74	2.21	4.03	3.45	1.13	1.72	.86	1.81
21	.65	1.20	2.47	3.24	1.71	2.36	3.33	2.98	.99	1.58	.86	1.79
22	.63	1.20	3.26	2.72	1.66	2.44	3.27	2.59	.99	1.49	.82	1.74
23	.61	1.26	5.01	2.80	1.63	3.09	3.49	2.37	1.11	1.62	1.19	1.90
24	.66	1.28	4.08	2.40	1.60	3.81	3.21	2.24	1.01	1.59	1.01	1.90
25	.78	1.25	4.63	2.30	1.56	3.49	2.99	2.10	1.11	1.55	.97	1.80
26	.79	1.40	-------	2.00	1.56	3.77	2.80	2.41	2.92	1.36	1.08	1.57
27	.76	1.66	-------	1.97	1.56	4.61	2.52	2.22	2.80	1.26	1.25	1.41
28	.76	2.13	-------	1.98	1.64	4.88	2.13	2.06	2.85	1.13	1.51	1.54
29	.97	1.83	-------	1.89	1.63	5.53	2.03	2.11	4.60	1.10	1.46	3.76
30	.96	2.15	-------	2.24	-------	5.88	1.90	2.11	4.43	1.03	1.33	6.07
31	1.16	-------	4.25	3.29	-------	5.03	-------	2.04	-------	1.08	1.32	-------

Note.—Gage height Dec. 16, 26-30 and Jan. 6-10 unsatisfactory. Stage-discharge relation Jan. 23-25 affected by ice.

Daily discharge, in second-feet, of Shenango River at New Castle, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	57	40	1,360	2,510	1,210	252	2,290	580	404	1,360	50	89
2	42	33	1,060	1,800	990	274	1,610	612	332	1,060	41	95
3	38	38	712	1,990	981	274	1,210	435	312	900	33	109
4	32	39	740	3,090	981	840	1,060	740	337	840	32	150
5	29	81	840	2,090	1,530	2,090	840	1,060	317	910	40	150
6	28	81	2,290	1,700	3,400	2,730	840	1,210	302	981	40	109
7	27	128	4,420	1,500	3,470	2,620	990	489	231	910	34	98
8	24	134	4,000	1,400	1,990	2,090	990	432	317	1,450	29	81
9	22	121	3,600	1,400	1,530	1,700	1,130	1,700	550	1,280	32	100
10	22	174	3,340	1,400	1,210	1,530	1,210	2,970	432	990	29	210
11	24	177	2,290	3,210	1,060	1,450	910	3,210	362	806	32	675
12	24	150	1,700	8,360	740	1,360	840	3,210	332	707	33	643
13	22	134	1,360	7,050	612	1,130	707	3,470	214	875	34	675
14	22	131	2,090	4,420	489	1,060	550	3,210	177	946	28	1,130
15	22	106	1,700	2,190	459	990	459	3,210	131	675	26	946
16	21	112	1,400	2,190	362	840	352	2,510	112	550	25	740
17	20	134	1,210	5,340	332	740	327	1,990	100	459	26	612
18	21	103	1,060	4,860	342	612	612	1,890	89	399	24	459
19	22	92	840	3,210	302	580	2,090	2,190	81	322	26	352
20	21	92	675	2,090	274	519	1,890	1,360	66	265	31	307
21	21	83	675	1,210	261	612	1,280	1,060	42	207	31	297
22	21	83	1,280	840	239	675	1,280	772	42	174	28	274
23	20	100	2,970	700	227	1,130	1,450	612	61	222	81	352
24	21	106	2,620	600	214	1,700	1,210	550	45	210	45	352
25	26	98	2,510	460	199	1,450	1,060	459	61	196	40	302
26	26	143	2,200	404	199	1,700	910	643	981	131	56	203
27	25	239	2,000	388	199	2,510	707	519	910	100	98	146
28	25	489	3,000	394	231	2,850	489	432	946	66	181	192
29	40	317	2,800	347	227	3,600	432	459	2,510	59	163	1,700
30	39	489	2,000	550	-------	4,140	352	459	2,290	48	121	4,420
31	73	-------	2,090	1,280	-------	2,970	-------	432	-------	56	118	-------

Note.—Discharge does not include the water diverted from the stream at the New Castle Water Works. Discharge estimated Dec. 16, 26-30 and Jan. 6-10, because of unsatisfactory gage height record, and Jan. 23-25, because of ice, from weather records, study of gage height graph and comparison with similar studies for Shenango River at Sharon.

Monthly discharge of Shenango River at New Castle, for the year ending Sept. 30, 1924.

(Drainage area 797 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	73	20	28.3	0.044	0.05
November	489	33	142	.186	.21
December	4,420	675	1,960	2.47	2.85
January,	8,360	347	2,230	2.81	3.24
February	3,470	199	839	1.06	1.14
March	4,140	252	1,520	1.92	2.21
April	2,290	327	1,000	1.27	1.42
May	3,470	432	1,380	1.74	2.01
June	2,510	42	436	.556	.62
July	1,450	48	589	.747	.86
August	181	24	52.1	.074	.09
September	4,420	81	532	.676	.75
The Year	8,360	20	897	1.13	15.45

Note.—Discharge does not include the water diverted from the stream at the New Castle Water Works. Run-off includes the quantity of water diverted.

OHIO BASIN—STATION NO. 31

CONNOQUENESSING CREEK NEAR HAZEN

Location.—At single-span steel highway bridge, about one-half mile south of Baltimore & Ohio Railroad station at Hazen, Beaver County.

Drainage Area.—355 square miles.

Records Available.—June 3, 1915, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge. Ezra Hazen, observer.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Right bank becomes inundated at a stage of about 10 feet; left is high and not subject to overflow. Bed is composed of gravel and boulders. Control is a deposit of gravel on ledge about 250 feet downstream from gage; permanent.

Extremes of Discharge.—Maximum stage during the year, 16.66 feet observed at 4.10 p. m. June 29 (discharge, about 13,600 second-feet); minimum, 1.20 feet at 7 a. m. October 4 and 4 p. m. on October 6 and 19 (discharge, 13 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined to 5,000 second-feet. Gage supposed to have been read to hundredths twice daily. Daily mean gage heights were computed from a continuous daily hydrograph, using as many of the observer's gage heights as appeared authentic, in connection with graphs for Wurtemburg, Sharon, Carlton and Hileman's Farm stations. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except during estimated periods, when they are fair.

Cooperation.—Station is maintained in cooperation with United States Engineer Office, Pittsburgh.

The following discharge measurement was made by R. J. Ferris: No. 25, July 23: Gage height, 1.97 feet; discharge, 109 second-feet.

Daily Mean Gage Height, in feet, of Connoquenessing Creek near Hazen, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.24	1.40	2.53	-------	3.66	2.77	3.14	-------	2.45	4.52	1.80	1.76
2	1.23	1.38	2.49	-------	3.66	2.75	3.05	-------	2.45	3.61	1.74	1.71
3	1.22	1.40	3.23	-------	3.72	3.23	-------	-------	2.52	-------	1.70	1.66
4	1.20	1.46	4.11	-------	-------	6.34	-------	3.10	2.49	-------	1.68	1.64
5	1.22	1.51	5.18	3.55	-------	7.93	-------	3.05	2.44	2.86	1.64	1.79
6	1.22	1.48	8.52	3.71	-------	5.49	-------	-------	2.46	2.79	1.66	1.89
7	1.23	1.44	8.21	3.78	-------	4.42	-------	-------	2.56	2.79	1.66	1.76
8	1.24	1.42	4.73	4.08	-------	3.86	-------	-------	2.62	3.23	1.81	1.69
9	1.22	1.38	4.00	3.97	-------	3.55	-------	-------	2.65	3.25	2.04	1.76
10	1.24	1.36	4.86	3.99	-------	3.37	-------	-------	2.28	2.98	2.05	1.92
11	1.22	1.32	6.15	4.14	-------	3.21	-------	-------	2.20	2.81	1.92	1.78
12	1.22	1.30	5.43	-------	-------	2.95	-------	4.58	2.12	2.73	1.78	1.70
13	1.23	1.30	4.73	-------	-------	2.82	-------	4.41	2.09	2.63	1.77	1.74
14	1.22	1.29	4.11	-------	2.57	2.81	-------	4.30	2.06	2.59	1.84	1.75
15	1.24	1.28	-------	3.95	2.56	2.75	-------	3.88	2.03	2.60	1.76	1.71
16	1.24	1.26	-------	-------	2.51	2.75	-------	3.60	2.08	2.55	1.67	1.73
17	1.24	1.27	-------	-------	2.73	2.75	-------	3.54	2.10	-------	1.65	1.66
18	1.22	1.25	-------	4.97	2.65	2.77	-------	3.44	2.04	-------	1.66	1.63
19	1.21	1.27	-------	4.57	2.77	2.73	-------	3.34	2.02	-------	1.74	1.64
20	1.22	1.29	-------	3.79	2.84	2.77	-------	3.30	2.05	-------	1.66	1.62
21	1.24	1.27	4.23	3.66	2.75	2.85	3.04	3.18	2.06	-------	1.62	1.70
22	1.25	1.27	4.61	3.49	2.68	2.78	-------	3.02	2.09	-------	2.02	1.79
23	1.28	1.24	4.47	3.32	2.65	2.74	-------	2.58	2.13	1.96	2.15	1.70
24	1.32	1.27	-------	3.43	2.69	2.79	-------	3.00	2.15	1.9	2.03	1.64
25	1.35	1.37	-------	3.84	2.76	2.84	-------	2.88	2.16	1.82	1.98	1.61
26	1.32	2.43	-------	3.79	2.79	2.95	-------	2.78	2.24	1.74	1.92	1.64
27	1.38	2.98	-------	3.75	2.73	3.17	-------	2.62	2.24	1.66	1.92	1.61
28	1.35	3.15	-------	3.63	2.82	5.10	-------	2.52	2.68	1.66	1.86	1.83
29	1.38	2.87	-------	3.70	2.89	6.58	-------	2.47	13.74	1.70	1.84	7.40
30	1.42	2.61	-------	3.65	-------	4.36	-------	2.47	10.17	1.74	1.82	9.92
31	1.45	-------	-------	3.65	-------	3.23	-------	2.48	-------	1.78	1.77	-------

Note.—Gage height unsatisfactory on days of no record, excepting Feb. 9-13 and July 20-22 which were not observed. Stage-discharge relation Jan. 6-10, Jan. 24 to Feb. 4 and Feb. 14 to Mar. 5 affected by ice.

Daily discharge, in second-feet, of Connoquenessing Creek near Hazen, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	15	28	455	2,600	650	280	840	200	398	1,900	112	100
2	15	26	420	2,400	600	480	770	220	398	1,180	95	86
3	14	28	912	2,000	550	750	650	380	425	900	83	74
4	13	36	1,580	1,500	950	2,400	600	805	420	750	78	69
5	14	44	2,480	1,180	1,700	3,000	480	770	392	637	69	109
6	14	39	5,450	1,000	1,800	2,750	420	600	403	605	74	143
7	15	34	5,180	850	1,700	1,820	600	460	455	605	74	100
8	15	31	2,060	750	1,300	1,420	800	550	485	912	115	81
9	14	26	1,500	700	1,100	1,180	650	5,500	515	912	202	100
10	15	24	2,220	700	850	987	600	5,500	310	735	206	154
11	14	21	3,380	1,580	650	875	550	2,600	272	605	154	106
12	14	19	2,660	4,200	550	702	460	1,980	236	575	106	83
13	15	19	2,060	4,200	420	605	400	1,820	223	515	103	95
14	14	18	1,580	2,400	340	605	320	1,740	210	485	126	98
15	15	18	1,200	1,500	280	575	300	1,420	198	485	100	86
16	15	17	950	2,600	220	575	260	1,180	219	455	76	92
17	15	17	750	3,200	200	575	260	1,100	227	420	72	74
18	14	16	480	2,300	180	575	600	1,060	202	380	74	67
19	14	17	360	1,980	180	575	1,000	987	193	340	95	69
20	14	18	320	1,340	170	575	900	950	206	320	74	65
21	15	17	1,660	1,260	150	637	770	875	210	280	65	83
22	16	17	1,980	1,100	150	605	650	735	223	220	193	109
23	18	15	1,900	950	150	575	550	735	240	169	250	83
24	21	17	1,300	750	150	605	480	735	236	146	198	69
25	24	25	850	600	150	637	650	670	254	119	177	62
26	21	386	480	480	150	702	600	605	291	95	154	69
27	26	735	550	420	150	840	480	485	291	74	154	62
28	24	840	1,300	340	170	2,390	380	425	545	74	132	122
29	26	637	1,100	320	180	3,740	320	408	10,600	83	126	4,460
30	31	485	950	360	-------	1,820	220	408	7,100	95	119	6,800
31	35	-------	1,000	750	-------	912	-------	414	-------	106	103	-------

Note.—Discharge estimated Dec. 15-20, Dec. 24 to Jan. 4, Jan. 12-14, 16, 17, Feb. 4-8, Apr. 3-20, Apr. 22 to May 3, May 6-11, July 3, 4,17-19, because of unsatisfactory gage height record, Jan. 6-10, Jan. 24 to Feb. 4 and Feb. 14 to Mar. 5, because of ice, and Feb. 9-13 and July 20-22, because of no gage height record, from weather records, study of gage height graph and comparison with similar studies for Slippery Rock Creek at Wurtemburg, Shenango River at Sharon, French Creek at Carlton and Crooked Creek at Hileman's Farm.

Monthly discharge of Conoquenessing Creek near Hazen, for the year ending Sept. 30, 1924.

(Drainage area 355 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	35	13	17.6	0.050	0.06
November	840	15	122	.344	.38
December	5,450	320	1,580	4.45	5.13
January	4,200	320	1,490	4.20	4.84
February	1,800	150	544	1.53	1.65
March	3,740	280	1,120	3.15	3.63
April	1,000	220	552	1.55	1.73
May	5,500	200	1,170	3.30	3.80
June	10,600	193	879	2.48	2.77
July	1,900	74	490	1.38	1.59
August	250	65	121	.341	.39
September	6,800	62	459	1.29	1.44
The Year	10,600	13	716	2.02	27.41

OHIO BASIN—STATION NO. 32

SLIPPERY ROCK CREEK AT WURTEMBURG

Location.—At three-span steel highway bridge, Wurtemburg, Lawrence County, about one half-mile downstream from the former gaging station, and about one mile upstream from the mouth of creek.

Drainage Area.—404 square miles.

Records Available.—January 1, 1912, to September 30, 1922, for station at former location, and October 1, 1922, to September 30, 1924, for station at present site.

Gage.—Standard chain attached to upstream side of bridge; read by Miss Grace Barton Wright. Elevation of gage zero 812.48 feet, United States Geological Survey datum.

Discharge Measurements.—Made from upstream side of bridge or by wading.

Channel and Control.—The right bank is high and not subject to overflow; the left becomes inundated at a stage of about 7.0 feet, and the stream overflows about 75 feet of the highway. Bed is composed of gravel and rocks; not subject to change. Low-water control is at a riffle, where the bed is composed of gravel and boulders, about 200 feet downstream from the gage; probably permanent. There is a decided change in the profile of the stream at a riffle, where the bed is composed of boulders and rock, about 1,000 feet downstream from the gage.

Extremes of Discharge.—Maximum stage during the year, estimated from hydrograph, 8.3 feet at 7 p. m. May 9 (discharge, 8,490 second-feet); minimum, 1.99 feet at 8.30 a. m. October 2 and at 4.30 p. m. September 16 (discharge, 24 second-feet).

Ice.—Stage-discharge relation usually affected by ice.

Accuracy.—Stage-discharge relation permanent except when affected by ice. Rating curve well defined below 1,000 second-feet. Gage read to hundredths twice daily. Daily discharge ascertained by applying daily mean gage height to rating table. Results good except for intermediate and high stages, when they are probably fair.

The following discharge measurement was made by R. J. Ferris: No. 44, July 23: Gage height, 2.50 feet; discharge, 138 second-feet.

Daily Mean Gage Height, in feet, of Slippery Rock Creek at Wurtemburg, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	2.30	2.42	4.35	5.70	3.14	2.92	4.39	2.96	4.11	5.58	3.21	2.23
2	2.17	2.30	3.41	5.24	3.10	2.97	4.04	2.71	3.74	4.31	2.83	2.69
3	2.16	2.33	3.21	5.30	3.12	3.10	3.69	2.92	3.47	3.01	2.25	2.97
4	2.13	2.26	3.04	4.97	3.10	3.69	3.90	3.94	3.15	-------	2.27	2.88
5	2.18	2.36	3.82	4.65	3.40	5.99	3.92	3.83	2.98	-------	2.32	3.03
6	2.14	2.38	5.86	3.94	4.57	5.98	4.05	3.54	3.07	2.51	2.74	3.35
7	2.18	2.36	5.93	3.77	3 90	5.48	4.32	3.30	3.07	3.90	2.46	2.48
8	2.30	2.52	4.34	3.77	3.57	4.87	4.28	3.57	3.22	4.09	2.48	2.37
9	2.07	2.42	5.03	3.73	3.52	4.18	4.10	7.24	3.53	3.59	2.59	2.41
10	2.10	2.53	5.47	-------	3.10	-------	4.04	7.17	3.29	3.39	2.51	2.41
11	2.06	2.47	4.99	-------	3.17	-------	3.80	5.42	3.08	3.27	2.32	2.35
12	2.11	2.35	4.71	-------	3.16	3.56	3.42	5.64	3.71	2.97	2.35	2.07
13	2.12	2.35	4.25	-------	3.01	3.49	3.30	6.02	3.83	3.51	2.28	2.25
14	2.12	2.35	4.07	-------	2.87	3.42	3.23	4.71	2.90	3.22	2.34	3.15
15	2.10	2.33	3.85	-------	2.92	-------	3.30	5.09	2.75	2.87	2.31	3.16
16	2.14	2.33	3.70	-------	2.79	-------	3.14	5.02	2.71	2.67	2.31	2.60
17	2.15	2.35	3.60	-------	2.60	-------	3.01	-------	2.53	2.60	2.35	2.25
18	2.04	2.31	3.39	-------	2.60	-------	3.14	4.50	2.49	2.51	2.39	2.33
19	2.16	2.26	3.14	-------	2.43	-------	3.36	5.24	2.61	2.54	2.33	2.30
20	2.21	2.24	3.07	-------	-------	-------	3.68	5.04	2.55	2.40	2.35	2.50
21	2.08	2.25	3.23	3.35	-------	-------	3.82	4.14	2.49	2.35	2.39	2.58
22	2.05	2.25	3.52	3.21	-------	3.54	3.71	3.82	2.57	2.31	2.40	2.59
23	2.05	2.30	4.94	3.19	-------	4.63	3.34	3.54	2.45	2.46	2.63	2.57
24	2.27	2.54	-------	3.12	-------	4.64	3.27	3.54	2.45	2.61	2.80	2.56
25	2.32	2.54	-------	3.09	-------	4.42	3.20	4.14	2.74	2.53	2.47	2.50
26	2.50	2.56	3.61	3.11	2.86	4.58	3.03	3.68	3.99	2.49	2.32	2.43
27	2.56	3.00	3.45	2.95	2.86	4.65	2.87	3.50	3.92	2.44	2.35	-------
28	2.54	2.95	4.45	2.78	2.86	5.09	2.87	3.39	3.96	2.32	2.47	-------
29	2.45	2.81	4.27	2.85	2.86	6.04	2.85	3.44	5.64	2.27	2.27	5.69
30	2.30	3.64	4.05	3.28	-------	6.04	2.83	3.91	5.82	2.24	2.33	7.63
31	2.35	-------	5.10	3.17	-------	5.44	-------	-------	-------	2.78	2.27	-------

Note.—Gage height Dec. 24, 25, Jan. 11-20, May 17, 31, July 4, 5 and Sept. 27 and 28 not observed. Gage height Jan. 10, Mar. 10, 11 and 15-21 unsatisfactory. Stage-discharge relation Jan. 23-27, Feb. 9, 11-13, 15, 16 and Feb. 19 to Mar. 2 affected by ice.

Daily discharge, in second-feet, of Slippery Rock Creek at Wurtemburg, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	86	118	1,310	2,880	403	240	1,310	313	1,040	2,740	428	70
2	57	86	540	2,180	378	280	960	212	775	1,220	258	204
3	55	94	428	2,320	378	378	740	296	572	331	74	318
4	49	77	354	1,940	378	740	880	920	403	85	79	258
5	59	102	810	1,500	540	3,360	880	845	322	85	91	354
6	51	107	3,200	920	1,500	3,360	960	636	354	144	223	510
7	59	102	3,200	775	880	2,560	1,220	481	354	880	129	135
8	86	147	1,220	775	636	1,820	1,220	636	428	1,040	135	104
9	38	118	1,940	775	480	1,130	1,040	5,710	636	670	170	115
10	43	151	2,590	950	378	880	960	5,710	481	540	144	115
11	36	132	1,940	2,800	340	750	810	2,450	378	454	91	99
12	45	99	1,610	4,600	300	636	540	2,740	740	318	99	38
13	47	99	1,130	4,800	280	603	481	3,360	845	603	81	74
14	47	99	1,040	3,400	275	540	454	1,610	287	428	96	403
15	43	94	845	1,200	220	500	481	2,060	227	275	89	403
16	51	94	740	1,900	220	480	403	1,940	212	198	89	173
17	53	99	670	3,600	173	480	331	1,500	151	173	99	74
18	33	89	540	3,600	173	460	403	1,400	138	144	109	94
19	55	77	403	2,600	200	420	510	2,180	176	154	94	86
20	65	72	354	1,400	200	420	740	1,940	157	112	99	141
21	40	74	454	510	200	420	810	1,040	138	99	109	167
22	34	74	603	428	190	636	740	810	163	89	112	170
23	34	86	1,820	380	190	1,500	510	633	126	129	184	163
24	79	154	1,500	340	180	1,500	454	636	126	176	246	160
25	91	154	950	280	170	1,310	428	1,040	223	151	132	141
26	141	160	670	260	170	1,500	354	740	960	138	91	121
27	160	331	572	240	190	1,500	275	603	880	124	99	110
28	154	309	1,310	238	260	2,060	275	540	920	91	132	170
29	126	250	1,220	266	220	3,360	266	572	2,740	79	79	2,880
30	86	705	960	481	-------	3,360	258	880	3,040	72	94	6,660
31	99	-------	2,060	403	-------	2,450	-------	1,200	-------	238	79	-------

Note.—Discharge estimated Dec. 24, 25, Jan. 11-20, May 17, 31, July 4, 5 and Sept. 27 and 28, because of no gage height record; Jan. 10, Mar. 10, 11 and 15-21, because of unsatisfactory gage height record, and Jan. 23-27, Feb. 9, 11-13, 15, 16 and Feb. 19 to Mar. 2, because of ice, from weather records, study of gage height graph and comparison with similar studies for Shenango River at Sharon, French Creek at Carlton and Crooked Creek at Hileman's Farm.

Monthly discharge of Slippery Rock Creek at Wurtemburg, for the year ending Sept. 30, 1924.

(Drainage area 404 square miles)

Month	Discharge in Second-feet			Run-off	
	Maximum	Minimum	Mean	Second-feet per square mile	Depth in inches
October	160	33	67.8	0.168	0.19
November	705	72	145	.359	.40
December	3,200	354	1,190	2.95	3.40
January	4,800	238	1,570	3.89	4.48
February	1,500	170	348	.862	.93
March	3,360	240	1,280	3.17	3.66
April	1,310	258	656	1.62	1.81
May	5,710	212	1,470	3.64	4.20
June	3,040	126	600	1.49	1.66
July	2,740	72	386	.955	1.10
August	428	74	130	.322	.37
September	6,660	38	484	1.20	1.34
The Year	6,660	33	699	1.73	23.54

OHIO BASIN—STATION NO. 33

RACCOON CREEK AT MOFFATT'S MILL

Location.—At single-span steel highway bridge, about four miles west of Woodlawn, at Moffatt's Mill, Beaver County.

Drainage Area.—178 square miles.

Records Available.—May 27, 1915, to September 30, 1924.

Gage.—Standard chain attached to downstream side of bridge; read to hundredths twice daily by Henry Schissler.

Discharge Measurements.—Made from downstream side of bridge or by wading.

Channel and Control.—Both banks are high and not subject to over flow. Bed is composed of rocks and rock shingle; permanent. Control is at a riffle about 100 feet downstream from the gage. Stage-discharge relation may be affected by vegetable growth at control section during summer months.

Extremes of Stage.—Maximum gage height during the year, estimated from hydrograph, 9.4 feet at 9 a. m. June 29; minimum, 1.90 feet from 7 a. m. October 21 to 6 p. m. October 23 and from 6 p. m. August 15 to 6 a. m. August 17.

Ice.—Stage-discharge relation usually affected by ice.

Cooperation.—Station is maintained in cooperation with United States Engineer Office, Pittsburgh.

Daily Mean Gage Height, in feet, of Raccoon Creek at Moffat's Mill, for the year ending Sept. 30, 1924.

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	1.96	2.02	3.31	5.07	3.06	3.30	3.40	3.70	3.09	3.31	2.17	1.99
2	1.94	2.02	2.86	3.84	3.01	3.21	3.23	3.48	2.93	2.96	2.20	2.02
3	1.94	2.02	2.78	5.13	2.80	3.50	3.10	3.38	2.84	2.79	2.11	2.38
4	1.94	2.05	2.67	4.37	2.73	4.15	3.01	3.65	2.75	2.75	2.09	2.11
5	1.94	2.30	3.86	3.75	3.10	5.65	2.94	3.21	2.67	2.74	2.52	2.04
6	1.94	2.44	4.32	3.62	3.65	3.82	3.31	3.10	2.90	2.63	2.21	1.98
7	1.94	2.32	4.42	3.35	3.12	3.42	3.35	2.96	2.82	3.39	2.05	2.06
8	1.94	2.26	3.52	3.28	2.94	3.07	3.48	2.87	2.90	3.07	2.05	1.98
9	1.94	2.23	3.70	3.18	2.80	2.98	3.55	3.01	3.35	3.02	2.05	2.05
10	1.94	2.18	4.30	3.16	2.75	2.98	3.40	2.94	3.12	2.73	1.99	2.21
11	1.94	2.14	3.68	5.08	2.70	3.02	3.26	2.92	2.89	2.65	1.93	2.16
12	1.94	2.08	3.48	3.98	2.70	3.00	3.16	4.27	2.89	2.59	1.93	2.04
13	1.94	2.05	3.35	3.45	2.68	2.96	3.10	4.58	2.79	2.61	1.95	2.10
14	1.94	2.02	3.28	3.14	2.64	2.85	3.01	4.02	2.82	2.66	1.91	2.08
15	2.00	2.02	2.98	3.07	2.62	2.75	2.87	4.06	2.63	2.64	1.89	2.06
16	1.94	2.05	2.96	4.12	2.52	2.75	2.80	3.65	2.57	2.43	1.87	1.98
17	1.94	2.08	2.87	4.58	2.62	2.87	2.73	3.62	2.52	2.39	1.91	1.94
18	1.94	2.08	2.78	3.70	2.55	3.05	3.22	3.49	2.68	2.35	2.25	1.94
19	1.94	2.05	2.70	3.40	2.57	3.14	3.52	3.65	2.70	2.27	2.02	1.90
20	1.94	2.02	2.70	3.09	3.56	3.19	3.28	3.35	2.62	2.25	1.95	1.90
21	1.90	2.00	2.72	2.96	3.28	3.08	3.12	3.16	2.47	2.13	2.15	2.14
22	1.90	1.98	4.72	3.90	2.87	3.12	3.12	3.11	2.45	2.05	2.11	2.00
23	1.90	2.05	5.42	3.25	2.78	3.57	2.99	2.98	2.39	2.17	2.05	2.45
24	2.07	2.39	4.12	3.28	2.75	4.35	2.90	3.04	2.37	2.17	2.43	2.24
25	2.28	2.58	3.62	3.18	2.98	4.00	2.82	3.02	2.37	2.13	2.32	2.14
26	2.23	2.48	3.38	3.12	2.96	4.48	2.76	2.89	2.31	2.11	2.13	2.01
27	2.10	2.96	3.28	2.80	2.93	4.30	2.64	2.81	2.29	2.09	2.09	1.96
28	2.05	2.71	4.32	2.90	3.50	3.82	2.66	2.81	2.52	2.09	2.05	1.96
29	2.02	2.62	3.70	2.98	3.35	4.92	3.08	2.91	7.49	2.05	2.05	4.14
30	2.02	3.33	3.44	3.10	------	4.55	3.01	3.62	4.06	2.05	2.02	4.74
31	2.02	------	4.40	3.17	------	3.70	------	3.25	------	2.39	1.99	------

Note.—Stage-discharge relation Jan. 5-9, 22-26 and 28 affected by ice.

TABLE NO. IX.

Miscellaneous discharge measurements made during the year ending Sept. 30, 1924.

Stream	Location	Date	Gage height	Discharge	Drainage area	Run-off Second-feet per square mile	Remarks
			Feet	Sec.-ft.	Sq. Mi.		
SUSQUEHANNA BASIN							
Frankstown Branch Juniata River	Huntingdon, Huntingdon County	May 21	3.82	2,450	845	2.90	Made at former gaging station.
Lycoming Creek	Bodines, Lycoming County	July 16	----------	223	147	1.52	Made by Penna. State College students.
OHIO BASIN							
Neshannock Creek	Eastbrook Station, Lawrence County	July 23	1.44	115	235	.49	Made at former gaging station.
Pymatuning Creek	Orangeville, Mercer County	Aug. 26	1.54	129	170	.76	Made at former gaging station.

TABLE NO. X.

Summary of Run-off in Second-feet per square mile, Run-off depth in inches, Precipitation and Per Cent Run-off to Precipitation, for the year ending Sept. 30, 1924.

Delaware Basin

Station	Drainage Area	Run-off in Second-feet per square mile												Run-off	Precipitation	Per Cent
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year	Depth in inches	Depth in inches	Run-off to Precipitation
Wallenpaupack Creek at Wilsonville	227	0.894	0.925	2.34	3.08	0.771	1.52	4.80	3.00	0.701	0.489	0.226	------	------	------	45.5	------
Shohola Creek near Shohola	82	.540	.441	2.11	3.73	1.23	2.23	6.13	3.65	1.13	.390	.300	.396	1.85	25.29	42.7	59.2
Delaware River at Port Jervis, N. Y.	3,070	.645	.857	2.64	3.36	.603	1.50	5.67	3.29	.951	.567	.349	.547	1.75	23.83	42.7	55.8
Bushkill Creek near Shoemakers	115	.421	.481	2.29	3.71	1.09	1.83	5.17	4.22	1.36	.555	.275	.551	1.83	24.96	48.5	51.5
McMichaels Creek near Stroudsburg	62	.776	.418	1.52	3.08	.924	1.37	3.47	3.10	1.03	.913	.618	1.15	1.53	20.87	51.2	40.8
Delaware River at Belvidere, N. J.	4,540	.575	.738	2.49	3.11	.846	1.59	5.70	3.44	.960	.544	.313	.456	1.73	23.57	44.0	53.6
Lehigh River at Tannery	335	1.31	.928	2.92	4.69	1.08	2.24	6.36	4.54	1.41	1.10	.496	1.69	2.40	32.70	47.3	69.1
Lehigh River at Bethlehem a	1,240	.727	.552	2.41	3.57	1.13	1.82	3.99	2.97	1.28	1.37	.623	.976	1.79	24.37	48.8	49.9
Delaware River at Riegelsville b	6,190	.614	.750	2.46	3.12	1.09	1.76	5.12	3.39	1.18	.814	.412	.549	1.78	24.17	45.4	53.2
Delaware River at Trenton, N. J. c	6,800	.590	.691	2.34	3.01	1.16	1.71	4.79	3.13	1.08	.776	.419	.419	1.68	22.83	46.1	49.5
Little Schuylkill River at Tamaqua d	44	.718	.736	4.27	6.09	1.53	3.25	4.89	4.73	2.59	2.18	1.15	3.45	2.98	40.48	53.6	75.5
Schuylkill River at Reading e	900	.812	.514	3.58	4.13	1.28	3.74	4.71	4.87	3.22	2.80	1.03	1.29	2.68	36.42	53.2	68.5
Brandywine Creek at Chadds Ford	285	.681	.604	1.21	3.06	2.45	2.30	3.24	2.55	2.19	1.44	1.05	1.06	1.82	24.73	55.4	44.6

a Run-off does not include the quantity of water diverted past the gage through the Lehigh Coal and Navigation Company Canal. Canal was closed Dec. 8 to Mar. 16.

b Run-off includes 230 second-feet, estimated quantity of water diverted past the gage through the Delaware Division of the Pennsylvania Canal. Canal was closed Dec. 9 to Mar. 6.

c Run-off includes 53 second-feet diverted by Pennsylvania Canal Oct. 1 to Dec. 8 and Mar. 7 to Sept. 30 and 210 second-feet by Trenton Power Canal and 160 second-feet by Delaware and Raritan Canal Oct. 1 to Dec. 31 and Mar. 1 to Sept. 30.

d Run-off includes the quantity of water diverted from the stream by the Panther Valley Water Company.

e Run-off does not include the quantity of water diverted past the gage through the Schuylkill Navigation Company Canal. Canal was closed Nov. 30 to June 30.

TABLE NO. XI.

Summary of Run-off in Second-feet per square mile, Run-off depth in inches, Precipitation and Per Cent Run-off to Precipitation, for the year ending Sept. 30, 1924.

Susquehanna Basin

Station	Drainage Area	Run-off in Second-feet per square mile												Run-off	Precipitation	Per Cent
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year	Depth in inches	Depth in inches	Run-off to Precipitation
North Branch Susquehanna River at Towanda	7,770	0.265	0.369	1.49	1.99	0.510	1.63	4.52	2.42	0.566	0.344	0.277	0.477	1.24	16.87	39.1	43.1
Towanda Creek near Monroeton	218	.198	.214	1.70	2.95	.505	1.51	4.63	3.16	.405	.316	.072	1.77	1.45	19.79	43.3	45.7
Tunkhannock Creek at Dixon	393	.613	.738	2.21	2.24	.527	1.67	3.87	2.20	.326	.336	.122	1.16	1.34	18.19	39.8	45.7
Lackawanna River at Moosic	265	1.06	1.29	2.82	2.77	.913	1.80	3.96	3.20	1.05	.913	.619	1.40	1.82	24.76	40.5	61.1
North Branch Susquehanna River at Wilkes-Barre	9,960	.337	.420	1.60	1.96	.539	1.51	4.06	2.39	.612	.400	.256	.388	1.20	16.44	39.4	41.7
Wapwallopen Creek near Wapwallopen	46	.772	.572	1.77	2.98	.778	1.69	2.65	2.50	.859	1.97	.452	.963	1.50	20.46	49.3	41.5
Nescopeck Creek near St. Johns	49	1.30	.661	2.82	4.37	.835	1.97	3.94	3.69	1.22	1.34	.441	1.28	2.00	27.19	48.4	56.2
Fishing Creek at Bloomsburg	355	1.02	.716	3.86	3.94	1.08	2.11	4.99	3.80	.983	1.19	.287	1.68	2.14	29.18	50.9	57.3
North Branch Susquehanna River at Danville	11,200	.379	.436	1.62	2.12	.565	1.44	4.16	2.46	.669	.548	.271	.390	1.26	17.12	40.5	42.3
West Branch Susquehanna River at Bower	320	.173	.547	6.12	4.22	1.25	4.31	3.06	3.69	2.20	2.24	1.00	.981	2.50	33.99	50.8	66.9
Clearfield Creek at Dimeling	370	.123	.424	4.14	3.43	1.08	3.89	3.14	4.46	2.00	1.79	1.30	.754	2.22	30.24	53.7	56.3
Driftwood Branch Sinnemahoning Creek at Sterling Run	270	.089	.229	3.04	4.15	.793	2.25	4.78	4.22	.974	2.13	.117	.489	1.95	26.51	44.4	59.7
West Branch Susquehanna River at Renovo	2,990	.079	.153	3.28	3.85	1.06	2.67	4.38	4.38	1.81	2.38	.542	.411	2.09	28.48	47.8	59.6
Bald Eagle Creek at Milesburg	140	.257	.508	2.74	3.86	1.08	2.99	4.55	5.54	1.94	1.63	.277	.743	2.18	29.75	47.3	62.9
Bald Eagle Creek at Beech Creek Station	565	.253	.327	2.07	2.88	.881	2.25	3.82	3.98	1.88	1.52	.487	.664	1.76	23.90	46.9	51.0
Pine Creek at Cedar Run	590	.087	.116	1.18	2.61	.625	1.63	4.42	3.12	.502	.419	.164	.471	1.28	17.44	38.2	45.7
Lycoming Creek near Trout Run	185	.339	.382	2.44	3.09	.654	1.60	4.69	3.16	.903	1.20	.277	.920	1.64	22.35	44.4	50.3
West Branch Susquehanna River at Williamsport	5,670	.161	.212	2.57	3.54	1.00	2.35	4.60	4.16	1.44	1.99	.413	.406	1.09	26.02	45.8	56.8
Frankstown Branch Juniata River at Williamsburg	295	.236	.349	2.74	3.02	1.08	3.42	3.25	4.44	2.01	1.54	.505	.502	1.94	26.31	52.9	49.7
Raystown Branch Juniata River at Saxton	790	.146	.205	1.89	2.81	.997	4.44	2.94	4.33	2.28	1.84	.443	.437	1.91	25.95	49.4	52.5
Tuscarora Creek near Port Royal	205	.152	.208	1.70	2.93	.902	3.77	4.20	4.40	1.67	1.61	.400	.615	1.89	25.70	52.0	49.4
Juniata River at Newport	3,380	.225	.226	1.90	3.08	1.04	3.28	3.73	4.02	1.89	2.02	.541	.438	1.88	25.50	49.9	51.1
Susquehanna River at Harrisburg	24,100	.266	.363	1.82	2.71	.892	1.99	4.19	3.18	1.07	1.33	.379	.351	1.55	21.08	44.8	47.1
Little Swatara Creek near Pine Grove	34	.932	.768	3.71	3.79	1.17	3.41	3.79	3.59	3.41	1.48	.476	1.41	2.34	31.77	56.6	56.1
Swatara Creek at Harpers	334	.826	.605	3.32	3.74	1.31	3.35	3.56	3.59	3.23	1.79	.629	1.01	2.26	30.67	54.7	56.1

TABLE NO. XII.

Summary of Run-off in Second-feet per square mile, Run-off depth in inches, Precipitation and Per Cent Run-off to Precipitation, for the year ending Sept. 30, 1924.

Ohio Basin

Station	Drainage Area	Run-off in Second-feet per square mile												Run-off	Precipitation	Per Cent
		Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Year	Depth in inches	Depth in inches	Run-off to Precipitation
Brokenstraw Creek at Youngsville	290	0.253	0.524	3.44	4.59	1.47	2.98	3.01	3.44	0.966	0.521	0.417	1.65	1.94	26.48	47.8	55.4
Oil Creek near Rouseville	330	.147	.288	2.50	3.67	1.30	2.58	2.23	2.88	.861	.418	.242	1.19	1.53	20.83	48.0	43.4
French Creek at Kimmeytown	207	.096	.309	3.38	3.71	1.85	3.20	2.93	2.69	.589	.435	.297	1.47	1.75	23.93	43.6	54.7
French Creek at Saegertown	586	.069	.311	3.16	3.89	2.05	2.32	2.73	2.76	.906	.606	.312	1.20	1.74	23.68	46.0	51.5
Cussewago Creek near Meadville	88	.026	.155	3.40	3.86	1.48	2.49	2.65	2.57	.623	.805	.055	.892	1.55	21.05	46.5	45.3
French Creek at Carlton	1,000	.097	.244	2.97	3.90	1.96	2.58	2.44	2.88	.804	.900	.367	1.32	1.71	23.25	46.9	49.6
Allegheny River at Franklin	6,010	.110	.256	2.46	3.74	1.36	2.18	3.34	3.13	1.03	.842	.333	.943	1.65	22.44	45.4	49.4
Red Bank Creek at Saint Charles	540	.115	.100	3.26	3.19	.835	2.70	3.04	3.00	2.44	1.82	.423	1.32	1.87	25.39	45.3	56.0
Mahoning Creek near Dayton	322	.107	.271	5.34	4.75	1.20	2.96	3.10	3.66	2.16	1.80	1.22	1.12	2.32	31.59	49.1	64.3
Allegheny River at Kittanning	9,010	.094	.209	2.83	4.12	1.29	2.54	3.49	3.44	1.18	1.06	.515	.862	1.79	24.30	45.6	53.5
Crooked Creek at Hileman's Farm	279	.062	.616	5.77	4.34	1.16	4.02	2.29	3.98	2.88	1.08	1.25	1.47	2.42	32.97	57.4	57.4
Stony Creek at Johnstown a	468	.385	.976	4.04	3.93	1.43	4.79	3.97	5.90	1.91	1.73	.660	.835	2.56	34.82	56.5	61.6
Blacklick Creek at Blacklick	386	.121	.869	5.00	3.42	1.03	3.60	2.46	4.04	1.69	1.48	.788	.964	2.14	29.05	55.4	52.4
Kiskiminitas River at Avonmore	1,720	.302	.872	4.00	3.77	1.30	4.35	2.95	4.76	2.15	1.48	.738	.913	2.36	32.15	55.7	57.7
Casselman River at Markleton	365	.136	.627	3.89	3.12	1.20	5.62	4.08	5.12	2.82	2.52	.523	.463	2.52	34.33	58.6	58.6
Laurel Hill Creek at Ursina	122	.233	1.86	6.61	4.16	1.30	7.16	4.13	6.55	2.83	1.62	.459	.934	3.17	43.19	59.0	73.2
Youghiogheny River at Connellsville	1,320	.064	.580	4.17	4.26	1.20	5.53	3.52	5.05	1.98	1.55	.277	.471	2.40	32.71	56.3	58.1
Youghiogheny River at Sutersville	1,680	.064	.619	3.74	3.75	1.08	4.98	2.80	4.01	1.71	1.40	.317	.404	2.08	28.37	54.8	51.8
Turtle Creek near Trafford	55	.061	.235	4.02	4.02	1.10	3.05	2.16	4.80	2.16	1.23	.131	1.19	2.02	27.57	45.4	60.7
Chartiers Creek at Carnegie	260	.175	.383	3.52	3.79	1.30	3.96	2.27	3.41	1.32	.877	.431	1.05	1.88	25.63	46.5	55.1
Shenango River near Jamestown	182	.048	.236	2.96	3.39	1.60	2.35	1.56	2.20	.509	1.04	.185	1.20	1.49	20.37	47.0	43.3
Shenango River at Sharon	611	.035	.218	2.80	3.19	1.27	2.16	1.49	2.03	.602	1.10	.145	1.06	1.35	18.34	45.4	40.4
Shenango River at New Castle b	797	.044	.186	2.47	2.81	1.06	1.92	1.27	1.74	.556	.747	.074	.676	1.13	15.45	45.4	34.0
Connoquenessing Creek near Hazen	355	.050	.344	4.45	4.20	1.53	3.15	1.55	3.30	2.48	1.38	.341	1.29	2.02	27.41	47.3	57.9
Slippery Rock Creek at Wurtemburg	404	.109	.359	2.96	3.80	.862	3.17	1.62	3.64	1.49	.955	.322	1.20	1.73	23.54	48.7	48.3

a Run-off includes the quantity of water diverted from the Quemahoning Reservoir.
b Run-off includes the quantity of water diverted from the stream at the New Castle Water Works.

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END OF YEAR